FINAL REPORT
BOARD OF INQUIRY - CROATIA

EXECUTIVE SUMMARY

FINAL REPORT

BOARD OF INQUIRY - CROATIA

The Board's Focus

The Croatia Board of Inquiry was called to investigate whether Canadian soldiers who served as peacekeepers in Croatia over a span of three years were exposed to environmental toxins. The terms of reference did not, however, limit the Board to this singular issue.

Given the flexibility to report on other relevant matters, the Board examined a broad range of subjects that influence the health and welfare of Canadian soldiers. As a result, many of our findings and recommendations address matters relating to the support and care provided to Canadian Forces (CF) members.

Research and Testimony

The soldiers who took part in OPERATION HARMONY, as the Canadian portion of the United Nations (UN) peacekeeping mission in Croatia was called, were, of course, our main interest. During 1993 to 1995, soldiers from three Regular Force infantry battalions, augmented heavily by Reservists and a number of other Canadian military members, served in an area called "Sector South" over a period of about 18 months.

During the fall of 1999, Board members listened to testimony from more than 90 witnesses, commissioned studies on topics as diverse as combat stress and command and control, and collected and analyzed thousands of documents, including battalion war diaries. We also employed a systems thinking and dynamic modelling firm to show us how and why various factors affect the physical and mental fitness of service members on peace support missions.

The Board made plans to visit Croatia, but cancelled them after the Croatian government refused us entry. Although we missed the opportunity to "walk the ground," we are confident in the quality of this report.

Reports of Illness

As the Inquiry unfolded, a perplexing picture emerged. While the majority of veterans of Op HARMONY enjoy excellent health today, many show similar signs of illness with no obvious cause. Yet, they were not all exposed to the same physical environment. This evidence led the Board to consider whether causes more complex than environmental contamination contributed to the health problems.

Soldiers from many rank levels came to Ottawa to testify about their service in Croatia. Most of them told compelling stories. Some described, in frank detail, the effect of grievous injuries on their lives and livelihoods, and the frustrations encountered trying to get proper care and compensation from an unresponsive system.

Many who are suffering chose not to come forward officially for fear of exposing their health problems and risking release under the "Universality of Service" rule. This rule requires that every member of the Canadian Forces be fit for deployment.

The number of informal contacts we made on field visits, or through calls to the Department of National Defence and Veterans Affairs Canada Centre for the Support of Injured and Retired Members and Their Families (commonly known as "the Centre" and operated from National Defence Headquarters by the Director of Casualty Support and Administration) convinced us that the fear of disclosure is a serious concern. Moreover, we are certain that this fear hindered our attempts to collect accurate information on the well-being of Op HARMONY veterans.

The illnesses reported go far beyond what can be expected to result from environmental contamination. This suggests that the symptoms experienced by many Op HARMONY veterans are due to other causes.

Environmental Contamination Results

Based on the evidence presented, we were unable to conclude with certainty that exposure to the "red dirt" of southern Croatia and other suspected contaminants was the specific cause of the illnesses. Perhaps some form of water-borne, air-borne or transient contamination was responsible in some cases. It is doubtful that the cause will ever be identified for certain. In the interests of preventing contamination during future missions, we recommend that the Canadian Forces take measures to better protect deployed personnel by improving environmental reconnaissance and monitoring for all missions.

Many veterans of Op HARMONY suffer from a range of symptoms that result directly from their service in Croatia. It is highly probable that at least some of these symptoms result from the very high level of chronic stress experienced during the operation. With the proper acknowledgement of the relationship between service and symptom, treatment can be provided to alleviate many of the symptoms of illness.

The fact remains, however, that many Canadian soldiers went to Croatia healthy and came back sick, or became sick after they returned. In our view, they are sick as a result of their service, and regardless of the nature or specific causes of their illnesses, Canada has an obligation to provide for their support and care.

Stress

Stress quickly emerged as an issue as we listened to soldiers recall the events of their missions. They recounted desperate efforts to build defensive structures in Sector

South, frequent shelling and small arms fire, the constant threats posed by landmines, the horrors of recovering the bodies of victims of ethnic cleansing and weeks of living and operating in dire circumstances without a break.

On identifying stress as an issue that undoubtedly affected the health and welfare of our soldiers in theatre, we determined that we needed to understand more about the impact of stress on health with a view to recommending measures to ensure appropriate treatment and prevent a recurrence of a similar situation in the future. Accordingly, the Board invited several experts in the field of stress-induced illnesses to testify. They explained that stress is cumulative and that long-term exposure to stress can cause people to develop physical symptoms. They also told us that statistics available today show that the effects of combat stress are predictable.

The experts described combat stress reaction, not as a new phenomenon, but as a very old one. Combat stress reaction has been documented among veterans of conflict in other military forces of other generations. For example, records show that for more than 300 years soldiers have reported a mysterious range of physical symptoms. This testimony led us to identify stress as a major cause of the illnesses reported among soldiers who served in Sector South. In fact, several soldiers reported being diagnosed with Post Traumatic Stress Disorder or PTSD-like symptoms. The Board also heard from a number of soldiers who are suffering from what appears to be stress-related ailments. The Board has been inexorably drawn to the conclusion that the health problems many have suffered relate to the horrific experiences and conditions experienced in theatre. The Board cannot ignore the link between service in Croatia and the problems we observed. Given the intensity and ferocity of modern conflict, it is essential to recognize and address the effects of exposure to stress.

Modern Peacekeeping Operations

Once we established stress as a major cause of illness, we weighed the aspects of Op HARMONY that may have combined to create high stress levels among the soldiers. The nature of peace support has changed since it began as a distinct military activity shortly after the end of the Second World War. In the Cold War era, the "classic" peacekeeping mission placed a neutral force between two potential or former belligerents. Generally, a cease-fire preceded the deployment.

As regional conflicts began to flare after the collapse of communism, the concept of peacekeeping expanded to include peace-restoring and humanitarian aid operations. Long-held military assumptions quickly became irrelevant as mission conditions changed. Op HARMONY is a good example. Many of the soldiers who served in Croatia were experienced peacekeepers. Yet few, if any, had faced conditions elsewhere that compared to Sector South.

Veterans of Op HARMONY experienced a pace and intensity of operations unknown to Canadian soldiers since the Korean War. Many of them lived under constant combat conditions in Sector South. They were frequently caught in the crossfire between

the warring Croats and Serbs. Sometimes, they themselves became targets as one or the other belligerents directed fire on Canadian positions.

The peacekeepers received slow, begrudging responses to their environmental concerns. They witnessed terrible atrocities. Nothing in their training could have adequately prepared them psychologically for the sights and hardships they had to endure.

At the strategic level, the organizational direction received by the Canadian Forces deployed in the Balkan theatre often differed from both Canadian doctrine and the commander's estimate. The mission also changed with unnerving frequency, and information flow back to national authorities was often slow and not well understood.

CF doctrine, a compilation of what works best, should be deviated from only after careful thought. We believe that the size and structure of deployed forces should be based on the operational requirement rather than imposed troop ceilings.

As regional conflicts continue to flare and grow in intensity, we believe there will be more deployments similar to Op HARMONY. Therefore, Canada must establish more rigorous criteria for committing Canadian Forces to peace support operations.

The United Nations

As the Board heard, the United Nations relies heavily on the Canadian Forces to help manage conflict around the world. Over the years, Canadian troops have developed a reputation as effective and capable peacekeepers. It is likely that the United Nations will continue to call upon Canada to contribute peacekeepers as new crises emerge. Due to the excellence of Canadian troops, it is likely they will be assigned the most dangerous and difficult tasks.

Although the United Nations assumes the responsibility of providing essential support when Canadian troops are committed to its command, accountability always rests with Canada. On several occasions during Op HARMONY, the United Nations failed to provide timely support and services. At various points, Canadian peacekeepers operated without adequate clean water, defensive stores, personal protective equipment and advanced surgical support.

CF personnel should never be committed to combat or near combat operations without essential equipment, support and services. If the United Nations cannot deliver to our standards, then the Government of Canada through the Department of National Defence and the Canadian Forces chain of command must be prepared to respond – immediately and without reservation. We believe that Canadians expect no less consideration for those who are placed in harm's way on their behalf.

Post-deployment Issues

Unfortunately, the lack of support for the peacekeepers who served in Croatia did not end with their return to Canada. The soldiers of Op HARMONY came home at a time when the Canadian military was undergoing major reductions in both size and resources. Traditional support structures were not available, or were inadequate or simply unresponsive to the needs of many of these new veterans.

We were appalled to hear of the frustrations and humiliating treatment experienced by injured soldiers. Too many of them ran into difficulty trying to get the care, consideration and compensation they deserve.

The treatment received by many of the injured that came to our attention has been, at best, arbitrary and certainly inadequate. This situation is a disgrace and cannot be allowed to continue. It must be emphasized that these soldiers suffered injuries in the service of their country.

Through Op HARMONY and other missions, the Department of National Defence and the Canadian Forces are creating a large and growing number of casualties. This situation is occurring as a direct result of operations carried out to fulfil the Government of Canada's direction. With appropriate help, however, many of these soldiers can regain their health and continue their military careers, or move on to productive civilian lives.

When military members leave Canada healthy and return injured, they must be afforded proper support and care. No matter what the nature of their injuries, that care should be provided in a way that preserves the dignity of the individual.

Canada is responsible for providing proper support and care to those injured in military service. The Department of National Defence, the Canadian Forces and Veterans Affairs Canada are accountable to Canadians for discharging that responsibility. As we prepare this report, steps are being taken to improve services for injured CF members. However, we must be vigilant to ensure that the veterans of modern operations receive the support and care they deserve.

The Board also considered the negative effect that casualties exert on operational capability. Clearly, it is in the best interest of the Canadian Forces to prevent, or at least minimize, the number and severity of casualties. The knowledge that proper care is available to the injured will also help to restore the confidence of serving members.

The Reserves

Reservists, drawn from Militia units across Canada, made up a significant number of the peacekeepers on Op HARMONY. We heard high praise for these soldiers. We also heard that Reservists lack access to many of the post-deployment services offered to their Regular Force comrades. In terms of services and administration, "the System" has yet to recognize the wider and more frequent employment of the Reserves.

We considered the level of care afforded Regular Force members unacceptable. By that measure, the care provided to Reservists is dismal. To address this disparity, the same quality of support and care must be applied to both Regular Force and Reserve members.

Recognition

Recognizing the courage and commitment of the soldiers who participated in Op HARMONY will help the injured heal. Even today, many Canadians are unaware of what the peacekeepers accomplished in Croatia, or the terrible conditions they endured. Acknowledgement from both the nation and the Canadian Forces will validate their efforts and the sacrifices they made trying to bring peace and order to a very troubled part of the world. In general, there must be better recognition of the extraordinary efforts of Canadian peacekeepers, by unit and by members both overseas and in Canada.

Specifically, we recommend that the personnel of 2 PPCLI Battalion Group and 1 R22eR Battalion Group who served in Sector South receive the proposed "Commander-in-Chief's Commendation" in recognition of their exemplary service. Both battalion groups previously received the UN Force Commander's commendation, a rare honour which the Department of National Defence has yet to acknowledge.

The Way Ahead

Over the last six months the Board has been encouraged by the progress made on several fronts. For example, the recently announced changes to the CF Medical Services address a number of our concerns. Similarly, the finalization of the DGE "Environmental Health Policy and Procedures for Deployed Operations" and the more flexible application of the Universality of Service principle are significant improvements. Additionally, changes underway within VAC should improve the service to all of Canada's veterans. It is equally heartening to note the increased degree of co-operation between DND and VAC.

OVERVIEW - A SYSTEM APPROACH

The Board of Inquiry – Croatia was called in August 1999 to:

"...investigate whether Canadian Forces members serving in the Canadian Contingent United Nations Protection Force (CC UNPROFOR) and assigned to the area of operations, commonly referred to as 'Sector South' during the period 1993 to 1995, were exposed to environmental contaminants in quantities sufficient enough to pose a health hazard during the course of their duties."[1]

The Terms of Reference defined a number of deliverables expected of the Board. It also clarified that these specific requirements were not intended to limit the scope of the Board's work. In fact, the Board was further invited to make findings and recommendations on any other relevant matter arising from its inquiry.

This report takes full advantage of the scope accorded the Board. Our report includes an examination, at a high level, of the powerful forces and influences arising from the subject mission that not only affected veterans of the Croatian theatre of operations but may well affect the sustainability of future CF peace support operations.

From the beginning, the Board focused its efforts on gaining an understanding of the effects on the health and well-being of CF members resulting from their participation in Op HARMONY (see Figure 1). The proper care of our people became the issue of primary importance.

Figure 1: Potential Effects of Environmental Contaminants on Deployed Personnel

Throughout the inquiry process, media and public attention centred on the potential for environmental contamination from industrial sources, nuclear, biological and/or chemical agents that may have been present in the Croatian theatre of operations. This is entirely understandable given that the media have sensitized the public, including CF members, to the deteriorating environmental conditions exposed in former Warsaw Pact countries after the fall of communism.

We hoped to find an identifiable cause in the bauxite or "red dirt" of southern Croatia. We did not. The Board has found that the levels of identified contaminants in the

[1] Caines, LGen V. M., ADM (HR-Mil), *Terms of Reference – Board of Inquiry Potential Exposure of Canadian Forces Personnel to Contaminated Environment – Croatia 1993-1995*, 16 August 1999.

Croatian theatre of operations were, by themselves, insufficient to explain the adverse health consequences experienced by veterans of Op HARMONY.

However, this is far from the whole story. The Board believes that the difficulties experienced by veterans of Op HARMONY, resulted from a complex web of physical and psychological stressors, built up over a prolonged period of time (see Figure 2). Many of these stressors continue to have an impact for years after deployment, often persisting beyond the point of release from the Canadian Forces. They are part of a "System" integral to both the Canadian Forces and its members.

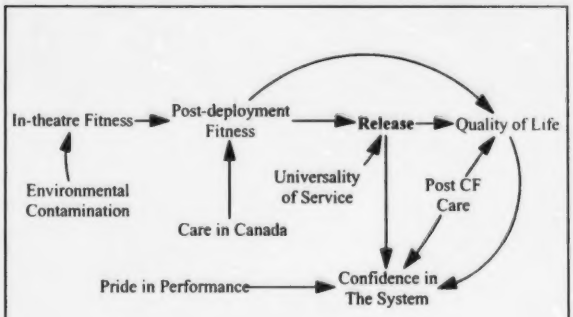


Figure 2: Impact of Stressors and Their Consequences for Peacekeeping Veterans

Early in its work, the Board recognized a need for direct input from and involvement with the soldiers who had served in Croatia. Consequently, we traveled across Canada, meeting separately with the media and the soldiers. The media sessions were designed to explain the Board's mandate and gain public trust. They also allowed us to reach the soldiers we could not contact by other means. The meetings with soldiers allowed us to gather information and to demonstrate that we were serious in our investigation of the difficulties experienced by veterans of Croatia.

The intensity of the reactions expressed by the soldiers surprised us at first. Many were angry, almost hostile, about the treatment they, and their fellow veterans, had received. The messages they communicated were laced with heavy doses of cynicism. Most doubted that anyone in Ottawa was truly concerned about their welfare.

We listened intently to the stories of those who met with us. We also sensed that other peacekeeping veterans were reluctant to come forward. After some time, we realized that the predominant underlying emotion was fear.

Soldiers are acutely aware that any admission of persistent medical or psychological problems can end a career under the "Universality of Service" rules. Furthermore, soldiers who admit illness risk being stigmatized within their own units, especially if their problems have no recognized medical cause.

By exercising patience and persistence, we developed a process that was open, transparent, caring and sincere. Over the course of many sessions, we watched the attitude of soldiers change, at least provisionally, to accept that the Board's work might actually make a difference to their collective situation.

Feelings of alienation and conflict pre-dominated the inputs the Board received. Both active and former CF members described a sense of abandonment by "the System" and erosion of the commitment to shared values between the CF leadership and its members. As Sullivan and Harper[2] explained: *"Shared values express the essence of an organization. They bind expectations, provide alignment, and establish a foundation for transformation and growth."*

The Board believes that these feelings are a source of significant stress in the lives of CF members. All stressors result from conflict. In this case, the conflict stems from the contrast between the intense pride in achievement that veterans feel when remembering their service and the lack of recognition, respect and care they received from Canada in return. This stress is exacerbated, in many cases, by psychological and physical illness and the impact of such problems on the quality of life for themselves and their families.

The reluctance of veterans to come forward with mental and/or physical health concerns may prevent us from realizing the full extent to which peacekeeping duty has affected CF members. It will be difficult to draw an accurate picture of the effect on Reservists, for example, since most of them dispersed across the country after deployment.

In addition, the current systems used to track the deployment experiences of CF personnel and to maintain medical records contain information that is incomplete and largely out of date. The Board has made recommendations to address these shortcomings. This is only one instance where the Board has uncovered problems that are persistent, largely understated and invisible to most scrutiny.

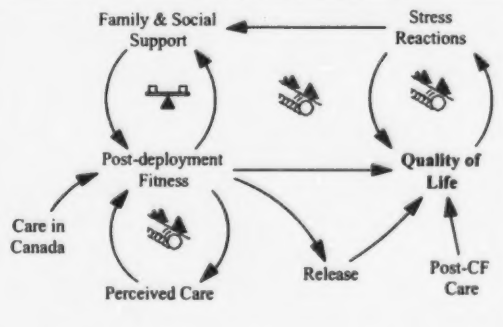


Figure 3: Interaction of Stress and Support on Quality of Life

In cases where the Board can provide direct input or indirect observations, we have identified several influences that have the potential to affect CF peacekeeping veterans (see Figure 3). In garrison, family and social services are generally available to support members who experience a decline in fitness level. However, to be of value, members must be able to maintain close contact with these services. Extended or frequent separation from such care during the post-deployment readjustment period can increase tensions and stress levels and lead to further complications.

[2] Sullivan, Gordon R. and Michael V. Harper, *Hope Is Not a Method: What Business Leaders Can Learn from America's Army*. New York: Broadway Books, 1997.

CF members are protected from overseas rotations for a year after returning to Canada. But once back in Canada, re-deployed members frequently leave home for training, exercises and other missions. There is a need to consider individual circumstances to maintain a proper balance among support needs, CF work requirements, and development and career activities.

A potentially harmful set of influences may come into play as a member's health and quality of life either continues to decline or resists improvement. Unresolved frustration may lead to stress-induced reactions such as physical violence, substance abuse and related behaviours. Such incidents can easily become self-reinforcing as health and quality of life decline still further. (This spiralling effect is symbolized as a snowball rolling down a hill.) Generally, such effects are also reversible if levels of fitness and quality of life begin to improve; in such cases, abnormal reactions often decline significantly.

The conflict occurs when the actual care a member receives differs from the care the person perceives is warranted or required. Members will feel well served only if this gap is non-existent or declining. Although subjective, stress induced through this process can be a very powerful determinant of an individual's ability to cope with health issues. Stress-induced incidents can also affect the level of family and social support (and their subsequent consequences).

As documented in this Inquiry, health care professionals and researchers are only beginning to understand the medical and psychological basis of many conditions that veterans of active military duty experience. Proven intervention strategies often either do not exist or are not widely practiced. In the extreme, the health care system available to CF members, including insurance and compensation coverage, may even deny the existence of health conditions that are not codified in current disease classification sources.

Encouragingly, the Board heard testimony indicating positive signs of progress on many fronts. Medical progress, for example, offers reason for hope. Nonetheless, recognition of the reality and the appropriateness of both treatment and compensation available to suffering CF members remain a pressing concern. Immediate action is also needed to improve administrative processes of the relevant health care and benefit plan agencies.

Many of the critical and disturbing inputs the Board received have centred on the bureaucratic and often dehumanizing processes involved in securing benefits after release. The establishment of The Centre for the Care of the Injured and Retired Members and Their Families, which provides information and guidance on such matters, is a useful first initiative. However, the Centre's resources still fall short of the needs of newly released members. Many are left alone to wrestle with a large and complex system. Steps must be taken to make it easier for people in difficulty to get administrative and health care assistance.

To address this need, the Board recommends the introduction of a "Fit for Release" process. This would provide a seamless financial, health care and administrative transition to civilian life for members who are no longer able to serve productively in their current occupations. In the same vein, Universality of Service should be modified further to allow injured CF members to serve in selected occupations if their condition and ability make continued employment possible.

The above recommendations address the current realities that needful CF members face. However, they do little to assist injured veterans in the longer term. Once the paperwork is done, former members have to live with their pensions, disability compensation and other health care benefits for the rest of their lives. Introducing change in this area is a daunting challenge since governing policies, eligibility criteria and levels of guaranteed support are often embedded in legislation (e.g. the *National Defence Act* and the *Pension Act*), or in complex insurance contracts and policies.

The Board advocates a comprehensive review and modernization, to at least current Canadian industry standards, of all relevant pension, compensation and benefit plans applicable to CF members, including cost-sharing arrangements and competitively based outsourcing where appropriate. Accomplishing these tasks will be a lengthy and detailed process that demands the commitment of senior leadership in the Canadian Forces, Department of National Defence and Veterans Affairs Canada. To do less would be a disservice to the men and women who proudly and proficiently served their country in times of need.

The Board determined that exposure to environmental contaminants did not play a major role in the post-deployment fitness conditions that we observe today. An independent analysis has told us that the soil that CF members were exposed to in Sector South did not contain contaminants in sufficient quantities to cause illness. However, the Board cannot rule out the possibility that other environmental factors may have played a role. Accordingly, the Board has made a number of observations and recommendations dealing with the pre-deployment and in-theatre phases of CF participation in peace support operations.

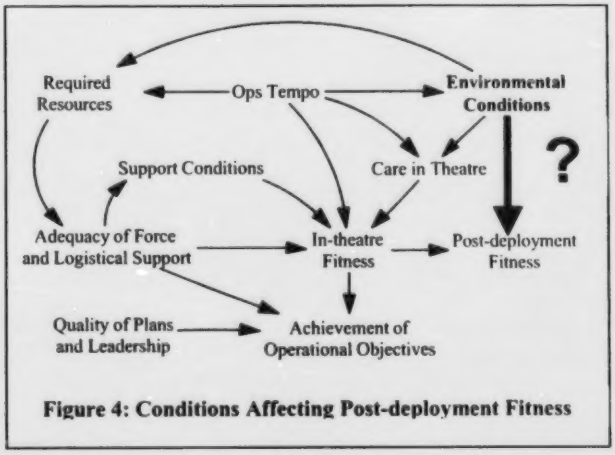


Figure 4: Conditions Affecting Post-deployment Fitness

We recognize that environmental conditions in theatre, as they exist and evolve, are beyond the direct control of occupying CF units. Poor or deteriorating environmental conditions obviously call for dedicated resources, both in personnel and logistical support. Some requirements can be expected through improved pre-deployment reconnaissance and planning co-ordination. However, both the logistics supply chain and personnel augmentation processes must be capable of rapid response as circumstances change (see Figure 4). Conducting verification audits of current practices, for example, would ensure that environmental response capabilities are available and appropriate to meet the need.

Ops tempo, or the pace and intensity of the operations, is a principal factor governing peace support operations. Here, CF members are always at risk since the level of ops tempo is dictated externally by the actions and responses of the belligerent factions. To a lesser extent, the strategies and tactics of the sponsoring agency (in Croatia, the UN and UNPROFOR) also exert an influence on ops tempo.

Some actions in Croatia were described as the most intense military activity experienced by the Canadian Forces since the Korean War. The lesson for the military and the Canadian public alike is that the character of peacekeeping has changed dramatically since the stand-up of the Cyprus mission. The ability to sustain peace support operations under such conditions will likely require higher levels of force commitment and more rapid rotations, leading to a diminished capacity to undertake simultaneous missions in different theatres. The Board believes, that due to changes in the nature of peace support operations, a thorough reassessment of total CF peace support capability is warranted.

An intensifying level of operations places additional stress on in-theatre health care needs. When the bullets are flying, preventive health care rapidly falls to a low priority. At the same time, the need for quick reaction care of the injured and advanced surgical capability increases. The Board, in particular, urges that Canada assume national-level accountability to ensure that in-theatre health care capacity is provided to Canadian Forces standards.

The Board has also made recommendations for improvements to planning processes and for improved co-ordination between various elements of the National Defence Headquarters-level "Joint Staff". In general, these recommendations reflect lessons learned during the Board's work. A recurring theme in these recommendations is

the need for Canada to assume accountability for the timely provision of critical resources needed by peacekeepers in theatre. Canadian peacekeepers must be adequately supported even in circumstances where the formal responsibility officially lies with the mission sponsor (e.g. the United Nations). Ultimately, the Canadian position on such matters should also be reflected in pre-assignment negotiations with sponsoring agencies to ensure that funding arrangements are fair and equitable.

Adequacy of Force and Logistical Support
Achievement of Operational Objectives
Quality of Plans and Leadership
Pride in Performance
Political Capital

Figure 5: Success Factors in Peacekeeping Operations

Canada's excellent track record of performance in peace support operations justifiably leads to a sense of individual and national pride in our contribution to a safer and more peaceful world.

One result of excellent performance is the accumulation of political capital over time. Within Canada, the Canadian Forces use this influence to ensure that adequate resources of all kinds are made available to sustain performance. The accumulation of political capital can also contribute to the establishment of high quality strategic and tactical planning and to maintaining the influence of CF leaders in national decision making. This is a self-reinforcing cycle, which can be eroded by the inability to sustain performance at expected high levels (see Figure 5).

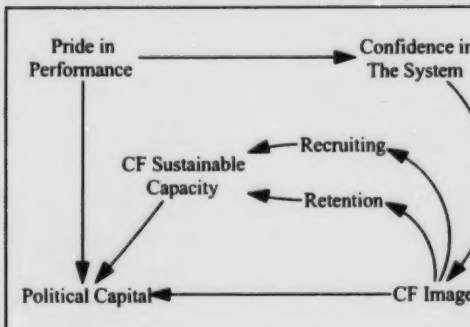


Figure 6: Effects of Lost Confidence

Political capital is also affected by the public image of the Canadian Forces, driven at least in part, by the perceptions of service members. These perceptions, in turn, reflect the confidence that CF members have in the system. Over time, these perceptions diffuse into the public sphere through word of mouth and the powerful influence of the media. When confidence erodes, it is ultimately reflected in a decreasing public image of the Canadian Forces. This process takes time to develop and an equally long time to recover (see Figure 6).

The Board is concerned about the long-term consequences of eroding member confidence in the Canadian Forces as an attractive and fair employer. Many of the Board's recommendations have, at their core, a desire to sustain and improve the generally excellent international public reputation achieved by the Canadian Forces.

The Board senses that a pervasive and growing lack of confidence within the Canadian Forces will make it increasingly difficult to retain high quality talent - people in whom the Canadian Forces have already made a substantial investment. Such talent is irreplaceable in the short term and very expensive to recreate in the longer term. Recognizing the expected and continuing limitations of purely financial compensation as a reason for staying, the Canadian Forces must work very hard to bolster the non-financial benefits of continuing service to stem the potential erosion of capacity through early departures.

The Canadian Forces, like all people-based organizations, are in a constant state of self-renewal. It is necessary to continually replace those who leave with the best and the brightest people available in the relevant labour market. The choice of the Canadian Forces as a good organization to join and in which to build a career is influenced by many factors. Among these factors is the public image of the Canadian Forces. Most young people are eager to join a winning team with high standards, a track record of success and a reputation for fair treatment of employees.

If the image of the military declines, which could result from a growing lack of confidence among current and former members, the Canadian Forces may fail to attract a uniformly high standard of new applicants. It is the flip side of the retention equation. Together, the abilities to effectively retain and recruit are essential to maintain CF sustainable capacity.

Global experiences since the fall of the Berlin Wall suggest that the demise of communism has not made the world a safer place. In many respects, it has become more dangerous as small factions have discovered new opportunities to pursue long-repressed political ambitions. The case of resurgent violence in the Balkans is one such example.

The need for sustainable peace support capacity will continue long into the new millennium. Canada can continue to play an important leadership role on a global scale if it corrects these deficiencies and hence improve the ability of the Canadian Forces to carry out this vital mission. The Board of Inquiry – Croatia believes that such a transformation is within our grasp. This report identifies the direction we must follow to achieve it.

---

[3] Caines, LGen V. M., ADM (HR-Mil), *Terms of Reference – Board of Inquiry Potential Exposure of Canadian Forces Personnel to Contaminated Environment – Croatia 1993-1995*, 16 August 1999.
[4] Sullivan, Gordon R. and Michael V. Harper, *Hope Is Not a Method: What Business Leaders Can Learn from America's Army*. New York: Broadway Books, 1997.

THE BOARD'S MANDATE

Mission

The Board was given the following mission:

"To investigate whether Canadian Force (CF) members serving in the Canadian Contingent United Nations Protection Force (CC UNPROFOR) and assigned to the area of operations commonly referred to as 'Sector South' during the period 1993 to 1995, were exposed to environmental contaminants in quantities sufficient enough to pose a health hazard during the course of their duties."

Execution

The Board was directed to:

"...gather all relevant information including the findings of any previous investigations or studies including but not limited to the formal environmental assessment directed by the Deputy Chief of the Defence Staff."

Major Task

Working within our mandate, we were given the following major task.

"The BOI shall ... produce a comprehensive environmental assessment of suspected contaminated sites with respect to soil, mine tailings, and air and water sources at sites occupied by ... personnel serving in 'Sector South'..."

Subordinate Tasks

The major task was broken down into seven tasks:

Task 1: *"Identify all sites in "Sector South" occupied by CC UNPROFOR personnel which contain or contained at the relevant time contaminants in quantities or levels of concentration sufficient to pose a health hazard."*

Task 2: *"With respect to each contaminated site, identify each contaminant including an assessment of the health hazards associated with each contaminant at the level or levels identified."*

Task 3: *"With respect to each contaminated site, identify who, if anyone from the CF, was at risk of exposure or potential to hazardous levels with respect to each site and each contaminant."*

Task 4: *"[Provide findings and recommendations in respect to] how exposure or potential exposure to contaminants was assessed, record and documented, and what*

protective measures were taken in theatre to address any health and safety concerns identified."

Task 5: *"[Provide findings and recommendations in respect to] the requirement for any additional or corrective measures to address any recognized deficiency in the administration of service records related to the deployments in 'Sector South' in Croatia during the period 1993-1995."*

Task 6: *"[Provide findings and recommendations in respect to] what measures are required for incorporation in the planning and preparation phase for future deployments to improve procedures for the early detection and documentation of environmental hazards, and in that regard, protection of CF members serving in the area of operations."*

Task 7: *"In addition, the BOI may make findings and recommendations on any other relevant matter arising from its inquiry.*

SUMMARY OF EVIDENCE AND FINDINGS

Introduction

During a period of close to five months, the Board heard from 90 witnesses, received briefings from experts and examined hundreds of documents, including the Op HARMONY war diaries and specially commissioned reports. The following is the summary of evidence presented to the Board.

Major Task

> *"Identify all sites in 'Sector South' occupied by CC UNPROFOR personnel which contain or contained at the relevant time contaminants in quantities or levels of concentration sufficient to pose a health hazard."*

A comprehensive environmental assessment of suspected contaminated sites occupied by CF personnel was carried out through a tasking by the Deputy Chief of the Defence Staff. In August 1999, 45 sites were investigated and surveyed (radiological) yielding a total of 78 soil samples and 5 samples of other material. The analytical parameters for the analyses were based on persistent chemicals and metals and the radiological testing. Of the sixty-five sites that were determined to potentially have been contaminated, seven were actually mobile observation posts and were not included as they were not physically occupied. The high mine threat in the area of another 10 sites precluded any possibility of access. Of the remaining 48 sites, three were inspected but contained no material that was clearly Canadian in nature.

Air and water sampling was not carried out for this current study because air and water contamination change with time and place. The air conditions in 1993 and those in 1999 would differ greatly. No locations were close to surface water, and since ground water flows, it generally does not represent historical conditions.

The results of the analysis of the sampling were forwarded to an independent contractor for a toxicological risk assessment. It was found that the levels of constituents present in the samples would pose a negligible health risk.

SUBORDINATE TASKS

For ease of reference, the Board has placed the seven subordinate tasks in two categories: "Direct" and "Implied". We were required to carry out six Direct Tasks. We chose to address a number of relevant matters that arose from the inquiry under the Implied Task.

Direct Tasks

Task 1: *"Identify all sites in 'Sector South' occupied by CC UNPROFOR personnel which contain or contained at the relevant time contaminants in quantities or levels of concentration sufficient to pose a health hazard."*

All sites, cross-referenced by unit, were identified. The toxicological risk assessment submitted by the contractor, O'Connor Associates Environmental Inc. of Ottawa, concluded that Canadian troops participating in Op HARMONY were not likely exposed to contaminants at concentrations high enough, nor for periods of time long enough, to present significant potential health risks.

Task 2: *"With respect to each contaminated site, identify each contaminant including an assessment of the health hazards associated with each contaminant at the level or levels identified."*

The soil samples taken in August 1999 were examined and an assessment of health hazards associated with each constituent was completed under contract by O'Connor Associates Environmental Inc. The toxicological investigation compared samples that exceed the Canadian Council of Ministers of Environment (CCME) Soil Quality Guidelines for residential or park land for non-threshold contaminants to determine possible human health concerns.

Based on the toxicological analysis, only arsenic exposure might have been sufficient to exceed the tolerable daily intake (reference dose) to a significant level. However, background exposure, not arsenic levels in Croatian soils, was the main contributor to this exposure, comprising more than 78 percent of the total estimated daily dose. Exposure to arsenic due solely to contact with Croatian soils was less than the reference exposure level.

The potential cancer risk posed by exposure to arsenic in Croatian soils, was assessed to have been negligible, amounting to less than one cancer in 100,000 persons exposed, this latter level being defined by Health Canada as a negligible or *de minimus* risk level. Exposures to all elements were also less than their respective, applicable occupational health limits.

Similarly, testimony discounted bauxite as a potential cause for illness in the circumstances experienced by Op HARMONY personnel.

The Board concluded that Canadian troops participating in Op HARMONY were not likely exposed to inorganic elements in soils at concentrations high enough, nor for periods of time long enough, to present significant potential health risks. This finding is supported by analyses examining public health assessment endpoints (reference doses, carcinogenic slope factors) and occupational health and safety endpoints (threshold limit values).

Task 3: *"With respect to each contaminated site, identify who, if anyone from the Canadian Forces, was at risk of exposure or potential exposure to hazardous levels with respect to each site and each contaminant."*

Again, the toxicological assessment concluded that Canadian troops participating in Op HARMONY were not likely exposed to contaminants at concentrations high enough, nor for periods of time long enough, to present significant potential health risks.

Task 4: *"[Provide findings and recommendations in respect to] how exposure or potential exposure to contaminants was assessed, recorded and documented, and what protective measures were taken in theatre to address any health and safety concerns identified?"*

The most significant protective measure for the health and safety of soldiers in regards to environmental concerns was the presence of a Preventative Medicine Technician on each battalion group rotation. These members were responsible, inter alia, for testing water for bacteria, inspecting the kitchen and living quarters for health hazards, protection against communicable diseases and monitoring and advising on general hygiene conditions. Clean water was of paramount importance. The Preventive Medicine Technicians (P Med Techs) testified that they tested the quality of the water regularly in compliance with their training. The testing consisted of using a standard field/shipboard millipore water test kit to determine if high counts of coliform, total coliform or fecal coliform existed. On occasions when high levels were found, the supply was changed (if the water was bottled) or personnel were advised to take appropriate precautions. During the time the Canadian Forces were in Croatia, water quality was thoroughly assessed and documented.

During the period under investigation, there were a number of incidents where health and safety concerns were examined:

- In 1993, after some of the soldiers expressed concern that the reddish brown ore used for filling sandbags was radioactive, Captain R.H. Sparks, a battalion group padre, tested for radioactivity. The readings were negative.

- In 1994, soldiers on Roto 4 expressed concern that the red brown soil was contaminated. MS W.J. Kelloway, the P Med Tech serving with this Op HARMONY rotation, sent soil samples on three separate occasions to Zagreb for chemical analysis on three occasions. Results were never returned. During the same tour, an abandoned aluminium oxide plant was considered for use. On further inspection, however, it was declared off-limits because of possible health risks. The soldiers' concerns about the soil led to the preparation of a letter in January 1995 by one of the 1 PPCLI Battalion Group medical officers to be placed on their files.

- In 1995, soil samples were taken at specific grid references representing locations where Canadians on Op HARMONY had served. The results were never published because the samples were lost.

The Board recognizes the outstanding work carried out by the battalion group P Med Techs. Any occupational health failings were due to the system rather than the lack of action by medical personnel. Although the P Med Techs were under-staffed and under-qualified to carry out the work that was required, their dedication made a positive difference to the troops.

Task 5: *"[Provide findings and recommendations in respect to] the requirement for any additional or corrective measures to address any recognized deficiency in the administration of service records related to the deployments in 'Sector South' in Croatia during the period 1993-1995."*

We have addressed the issue of deficiencies in the administration of service records in the Observations section of this report. Some of the specific deficiencies we identified and the corrective measures we propose are listed below:

Personnel Service Records	
Deficiencies	Corrective Measures
Quality Assurance	Personnel Database: Op ENTERPRISE: to validate with CF members (both Regular and Reserve) all personal information contained in electronic files. In particular, all files to be properly annotated with respect to out-of-country deployments.
Quality Control	J1 Coord to: ➢ know at all times where all CF personnel are located while deployed outside Canada. ➢ maintain, validate and retain (through PeopleSoft) all key information pertaining to CF personnel (both Regular and Reserve) deployed outside Canada.

Quality Records	War diaries: ➢ to include monthly nominal rolls of all personnel, including all personnel on temporary duty and visitors. ➢ CF contingent headquarters to write war diaries with same nominal roll information. Medical records: ➢ The issue of medical records is dealt with under Task 7.

Task 6: *"[Provide findings and recommendations in respect to] what measures are required for incorporation in the planning and preparation phase for future deployments to improve procedures for the early detection and documentation of environmental hazards and, in that regard, protection of CF members serving in the area of operations?"*

The Board identified a number of recommendations relevant to this task which are described later in this report. The most relevant one is the implementation of the long overdue draft "***Environmental Health Policy and Procedures for Deployed Operations***". This draft policy outlines the procedures to be followed by CF units when conducting deployed operations in order to protect human health and the environment.

Implied Tasks

Task 7: Lastly, our terms of reference gave us latitude to *"make findings and recommendations on any other relevant matter arising from [the] Inquiry."*

From that last quote we inferred that we had the task to *"gather evidence and make findings and recommendations in respect of our members' well-being and the Canadian Forces' ability to conduct international peace support and humanitarian operations."*

For ease of understanding and alignment with CF doctrine and practice, we have divided this task into three parts:

- *Identify how personnel and forces can be better* ***employed***
- *Identify how personnel and forces can be better* ***protected***

- *Identify how personnel and forces can be better* ***sustained***

In short, while the Board recognizes that service members will continue to be deployed on peace support operations, we believe the conditions of their employment can be improved. The Board also believes that measures can be taken to protect troops from physical threats and improve organizational and physical support after overseas deployment.

Employment - General

The Board commissioned a brief history of the Canadian Forces in the Balkans and heard testimony from a number of witnesses including commanders and their staff who had served in Croatia. We also engaged Colonel Angus M. Brown (Retired) to complete studies on the process of committal of the Canadian Forces to peace support operations, and command, control and intelligence in peace support operations with a focus on Op HARMONY. Based on the testimony heard and a review of Colonel Brown's studies, the Board believes that the nature and problems of the deployment of troops on Op HARMONY contributed to the health problems faced by some CF members.

In terms of military planning, the deployment of CF troops to UNPROFOR I and II failed to meet at least two major criteria: the mandate was not clearly defined and resources were inadequate. Successive UN resolutions were contradictory and ambiguous in delineating the mandate of the UN force. As well, the United Nations did not provide sufficient troops to allow the UN Force Commander to carry out assigned tasks. Expectations kept rising as diplomats passed resolution after resolution for action without allocating adequate additional resources. In military terms, "mission creep" became a problem. Regardless, the Canadian government made and maintained its troop commitment to UNPROFOR.

Once Canadian troops arrived in Croatia, the situation grew more serious. Belligerents failed to honour cease-fire arrangements. Normal political control in parts of the Balkans broke down and armed paramilitaries and former military units co-operated with UNPROFOR erratically. The UN force proved too weak to meet expectations. Service in UNPROFOR exposed troops to greater risk and to more intense operations than experienced in previous UN missions.

During UNPROFOR, serious discrepancies arose between the raw data reported by field units and the situation reports received in National Defence Headquarters (NDHQ). This led at times to an incomplete understanding by NDHQ staff of the prevailing conditions on the ground. As a result, DND staff were not always aware of the prevailing conditions on the ground. In addition, ground troops had problems receiving information, leaving commanders with little or no knowledge about the overall situation in their area of responsibilities.

Domestically, constant resource reductions to the Canadian Forces and increases in tasking took a toll. Personnel were given less than optimum periods of time between overseas tours or between tours and requirements to leave home on temporary duty for training and other military activities. Planners did not take these downstream effects into account during Op HARMONY.

Throughout the Balkans, and in UNPROFOR especially, the nature of peacekeeping changed. Canadian troops were exposed for extended periods to dangers

not normally associated with previous peacekeeping situations. However, while the environment changed, CF organizations and doctrine did not. Suddenly, soldiers found that they were not facing organized military units ready for cease-fire arrangements, but rather "...bandits, drunks, criminals and child soldiers...." to quote Major General Alain Forand. Fortunately, good leadership and training at all levels prevented more extreme consequences. Nonetheless, the Board is concerned that these deficiencies should be recognized and corrected. Specific findings and recommendations related to the employment of Canadian Forces on peace support operations are found below.

Employment - Findings and Recommendations

Accountability for Mandate Changes and Variations

Finding: All levels of command did not adequately assess modifications and expansions to UNPROFOR I and II mandates for their impact on the mission. As a result, frontline troops were pulled in different directions, over-extended and poorly informed about the mission.

Military units are designed to fight, or support those who do. The possibility of injury or death is ever present during military operations. Service personnel understand and accept this liability. At the same time, however, they expect a high degree of responsibility from those who make the decisions that may put them in harm's way.

Canadians confer responsibility on a democratically elected government to call upon the Canadian Forces to execute tasks. Due to the serious nature of military operations, the decision to employ armed forces to carry out national policy must not be made lightly.

Within DND and other departments, staff consider a number of criteria before recommending the commitment of troops to peace support operations. These criteria are employed as guidelines, allowing the government to exercise flexibility in making decisions to account for the varying circumstances that surround requests for troop deployments. While this approach appears reasonable, the margin for error can narrow dramatically considering the consequences of action in a highly charged military environment. Poor policy decisions may become, literally, a matter of life and death for troops operating in a foreign battle zone.

The national level must monitor all changes of mandate, or variations within a mandate, to assess the overall impact on a contingent commander's mission. The acceptance of a change must be a conscious, accountable decision. This responsibility does not preclude the requirement to give more latitude to the contingent commander for decision making concerning the employment of Canadian contingent forces. This may be difficult to accept in a situation like UNPROFOR where many changes or modifications to mandates had political implications. Nevertheless, the trend toward centralized micro-command from Ottawa is unhealthy and has proven to be ineffective. Decentralized

command authorities, working within clear general operational direction, have consistently proved more successful in war and in peace.

The Board also received evidence that, although a number of DND estimates acknowledged the problem of providing troops, at no time did military advice reach the federal government that it would be inadvisable to send the Canadian Forces to UNPROFOR. This indicates a lack of consistency and accountability in the application of military doctrine that is cause for concern. Also of concern was the fact that one entity (J Staff) was responsible for both strategic and operational planning, causing a *de facto* conflict of interest within the planning process.

Furthermore, the Board heard evidence indicating that the criteria the government uses to commit the Canadian Forces to peace support operations may not adequately assess either the short-term or long-term impact on CF personnel.

The Board recommends that all changes and variations to mandates must be approved by the accountable level of command.

Size and Structure of Deployed Forces

> **Finding:** The force structure for peace support operations in Croatia often reflected imposed financial and resource limitations rather than operational requirements.

During the timeframe of the Croatia missions, personnel shortages frequently occurred as a result of both Canadian and UN budgetary restrictions. To control finances, the number of troops in theatre at any given time was frequently capped. This restriction forced commanders into the position of having to tailor less than optimal organizations for service in areas of risk.

Restrictions on the number of personnel also made it more difficult for units to respond to periods of increased risk and emergencies. Personnel shortages stemming from budgetary restrictions exerted a negative effect on unit organization and command relationships, resulting in ad hoc command relationships and unit structures, compromises that affected decision making and battalion groups with minimal staff and contingent headquarters deployed with almost no staff

To compensate for an overall shortage of troops in UNPROFOR, Canadian units were split up to perform various independent tasks. These units and the resultant sub-units, which were already under-strength, became over-extended for long periods. While this approach was workable as long as the situation remained relatively calm and static, it proved inadequate during periods of high activity.

The consequences of splitting and over-stretching army units are immediate and often debilitating under operational conditions. In the short term, tactical efficiency is degraded, which may, in turn, lead to weaknesses that a belligerent can exploit. More importantly, in the long term, the operational tempo deteriorates or, conversely, if it

remains the same, unit members are forced to work harder and longer. The result is debilitating stress and the eventual degradation of the unit's most valuable combat asset – its people. Deployed under-strength units expose troops to elevated combat risks, excessive stress and to possible undetected risk of environmental hazards. All of these conditions were present in Croatia.

Another factor that, in effect, created under-strength units was the granting of leave to troops. While in itself a necessary and beneficial activity, the end result was that the remaining troops on the ground had to make up for those away. The absence of troops leads to a further degradation of the unit's overall capability and this reality should be a factor in the estimate and compensated by the creation of a "military manning overhead" for each deployed unit's establishment.

Canadian troops were so stretched that the workload and danger imposed unacceptable levels of stress. They also lacked adequate resources. Specifically, the numbers of preventive medical technicians, psychologists and stress incident counselors were insufficient. In addition, other support items (e.g. medical and water supplies) were often in short supply.

The size and the structure of the force to be deployed should respect the operational requirement based on the operational commander's estimate and CF doctrine. An imposed troop ceiling should not restrict the size and structure of the force.

The Board recommends that the size and structure of deployed forces must be based on operational requirements and not imposed troop ceilings

Dealing With Pre-deployment Environmental Threats

> **Finding**: Battalion group and contingent headquarters were deployed with "situational awareness" deficiencies. There was little or no intelligence processing capability and very little hard assessment of intelligence which includes factors such as the environment in which the unit is to operate.

The testimony of successive battle group commanders shows evidence of a lack of situational awareness. For example, while performing pre-deployment reconnaissance, most were surprised by the in-theatre operational condition they found; accordingly, they had to make last-minute changes to their unit training to improve their preparedness.

In effect, battalion group commanders did not (and normally would not) have the facilities to carry out any but the most basic activities. There was little or no intelligence processing capability, no command staff exclusively dedicated to monitoring and assisting the battle group, and no time in which to exercise proper command at any level above the battle group.

Intelligence must be recognized as an essential element of effective command. Nuclear, biological, chemical and environmental threats must be part of the overall threat assessment.

The Board recommends that all deployed CF contingents and units have the human and technical means to collect, process and analyze intelligence and provide resources to assess pre-deployment environmental threats.

Protect the integrity of units upon their return to Canada

> **Finding**: Canadian Forces members frequently do not receive adequate time to recover and adjust following overseas deployments.

From testimony and field visits, we learned that many of the troops deployed on Op HARMONY spent much less than 12 months at home between deployments in contrast to Canadian Forces policy. As a result of personnel reductions, normal and tour-specific individual, unit and collective training also cut deeper into home time. Morale and unit cohesion suffered from the need to shift individuals from one tasking to another to make up the next units for deployment.

On return to Canada, members must be given time to take stock of their lives and return to normalcy. Accordingly, there should be a 60- to 90-day period in which members are not subject to temporary duty to pursue activities such as career courses or incremental taskings. Reservists should remain on strength with the units in which they served overseas.

The Board recommends that the integrity of units be protected upon their return to Canada.

Stress Debriefing Teams

> **Finding:** Units were ill equipped to deal with critical incident stress disorder during and after deployments.

We learned from the testimony of witnesses and on site visits that debriefing was not perceived as a vital element to peace support operations. Stress debriefing teams must be assigned to missions at the start of each deployment and accompany the unit overseas. The debriefing staff must be seen as members of the unit and should remain with the unit on re-deployment. The team must be familiar with the soldiers' experience(s).

The Board recommends that the CF include integral stress debriefing teams to accompany Canadian troops through all three phases of unit employment.

Protection - General

The Board has covered under "Protection" the categories of physical, occupational health and safety, and environmental issues and concerns. The manner in which Canadian Forces troops are organized, equipped and commanded bears directly on the degree of protection they possess. "Protection" is, therefore, very much linked to "Employment" as described above and in the papers commissioned by the Board. From the testimony received and the evidence available, the Board made findings and recommendations related to the protection of Canadian Forces on peace support operations.

Protection - Findings and Recommendations

Lack of Analysis Capability

Finding: No formal process was in place to properly assess and analyze data to allay fears of possible contamination and effects on CF personnel.

There were concerns in Sector South about the potential presence of polychlorinated biphenyls (PCBs) and bauxite (used to fill sandbags). These concerns and the allegations made later were never confirmed or fully investigated with adequate closure until the comprehensive environmental assessment was done for this Board. Implementation of appropriate policies, specifically the draft Director General Environment (DGE) ***Environmental Health Policy and Procedures for Deployed Operations***, would help to resolve this issue. This draft policy outlines the procedures for CF units to follow when conducting deployed operations so as to protect human health and the environment. The policy will include input from the Canadian Forces Medical Services, Nuclear Safety and J3 NBC. This policy should guide decision making once requests for deployment are received.

The primary reason for considering the state of the environment before executing deployed operations is to protect human health. During deployed operations, CF personnel may be required to move to locations where the state of the environment is not fully understood. Before executing such moves, a proper reconnaissance should be conducted to evaluate the risks posed by the existing environment on human health.

The evaluation should consider different elements of contamination in different exposure media, including air, water and soil. The studies should be conducted in the vicinity of the proposed site as well as the surrounding geographical region. Recommendations should be made regarding appropriate mitigation measures to limit environmental exposure.

The Board recommends that the draft Environmental Health Policy and Procedures for Deployed Operations be instituted.

Shortage of Preventive Medical Technicians

Finding: The assignment of one P Med Tech per rotation was insufficient to do the job required.

The Board learned during testimony that only one P Med Tech was assigned to each rotation. No one else was assigned to do the job when the P Med Tech went on leave or was otherwise unavailable. Conditions on each rotation required constant testing to prevent illness. The P Med Techs tested water for bacteria, inspected the kitchens and living quarters for health hazards, protected against communicable diseases and checked general hygiene conditions.

One P Med Tech is not enough to cover all potential aspects of preventive medicine in a battalion group deployed to a mission area; a minimum of three is required. The establishment of a trained staff along with the provision of a complete suite of testing equipment would ensure that all aspects of preventive medicine are adequately carried out.

The Board also learned that proper equipment and trained staff were not available to investigate environmental concerns raised by peacekeepers in the field. The P Med Techs were only occupation Qualification Level 5 trained. The QL 5 level did not prepare them to deal with occupational health issues such as contaminated soil, noise and air quality. From the evidence heard, the Board believes that the provision of proper testing equipment and training would alleviate concerns in the field.

The Board recommends that more than one Preventive Medicine Technician be assigned to each rotation. The Board also recommends that trained staff and proper testing equipment be provided to investigate environmental concerns .

The Guarantee of Clean Water

Finding: Arrangements were inadequate to ensure a reliable supply of potable water.

From the testimony, the Board learned that water quality was of paramount importance but that there were a number of serious problems assuring a supply that met Canadian standards. There were many observations about the quantity and quality of water. Even bottled water was not necessarily potable. The P Med Techs occasionally found that it had excessive coliform counts. When this occurred, the supplier was changed.

At the beginning of Roto 4, the P Med Tech determined that the available water was contaminated. The P Med Techs also testified that they could not test for chemical contamination or any other environmental concerns pertaining to water. In some instances, water from questionable sources was used for bathing and cooking.

The CF must ensure the quality of water from both bacterial and chemical points of view. Currently, only the presence of a Reverse Osmosis Water Purification Unit (ROWPU) can guarantee a ready supply of clean water.

The Board recommends that, where water quality is an issue, a water purification capability, such as a ROWPU (Reverse Osmosis Water Purification Unit), be provided to ensure the quality of water, from both a bacterial and chemical point of view.

Lack of a Single Lead Agency for Environmental Issues

Finding: There was no single operational point of contact responsible for all environmental issues (including nuclear, chemical, biological and environmental concerns).

Various testimonies supported by exhibits revealed that it was unclear whether or not testing was done. However, it was clear that information did not make its way up the chain of command. For example, samples were taken and misplaced. On three separate occasions, samples sent to Zagreb for testing were lost. Samples were also forwarded to Canada, but were misplaced before they could be tested.

If a single contact point for all environmental issues and concerns existed, protective measures could be passed to the field in a timely manner. DND should designate a lead senior-level position to control and ensure all environmental concerns are addressed before and during a deployment. This includes nuclear, biological, chemical and environmental hazards and concerns.

The Board recommends that J3 Nuclear, Biological and Chemical (NBC) be designated as the lead operational point of contact responsible for all environmental issues and concerns.

Lack of Consistent Approach to Environmental Issues

Finding: The conduct of reconnaissance was not consistent for all missions.

In some cases, this inconsistency resulted from restrictions on the number of personnel allotted to the task. As a result, environmental concerns and issues were not always addressed. Environmental risk assessments were not considered nor included in operational planning. Consistent reconnaissance for all CF operations, according to specific guidelines, would alleviate this situation.

Members of the Canadian Forces can be put in jeopardy if proper reconnaissance and assessments are not covered in all missions. These activities are an important first step in determining potential threats to health and safety and planning appropriate measures.

The Board recommends that consistent reconnaissance procedures for all missions, covering all potential hazards to CF personnel, be instituted and followed. Operational planning procedures must include an "Environmental Risk Assessment".

Sustainment - General

The Board defined the ability to "Sustain Forces" to be: To preserve the operational effectiveness and readiness of the Canadian Forces; to support, to maintain.

The Board has identified the following categories to present sustainment findings related to the employment of CF personnel:

- CF Establishment
- CF Assignment System
- CF Individual Training and Education System
- CF Health System
- CF Logistics

Sustainment – Findings and Recommendations

Stress

Finding: Some veterans of Op HARMONY suffer from a range of symptoms that can be linked to the very high level of stress experienced during the operation.

Stress quickly emerged as an issue as the Board listened to soldiers recall the events of their missions. They recounted desperate efforts to build defensive structures in Sector South, frequent shelling and small arms fire, the constant threats posed by landmines, the horrors of recovering the bodies of victims of ethnic cleansing and weeks of living and operating in dire circumstances without a break. This acute stress was in addition to chronic stress due to frequent deployments, lengthy pre-deployment training, career courses between deployments, all amid an organization in the process of down-sizing.

As many veterans of Croatia had no exposure to the suspicious soil yet shared similar health problems, the Board examined the possibility that the common exposure to stress could result in some of these illnesses. The Board invited several experts in the field of stress-induced illnesses to testify and commissioned a study by Dr. Allan D. English. They explained that stress is cumulative and that long-term exposure to stress can cause people to develop physical symptoms. They also told the Board that statistics available today show that the effects of combat stress are predictable. The experts described combat stress reaction, not as a new phenomenon, but as a very old one. Combat stress reaction has been documented among veterans of conflict in other military forces of other generations. For example, records show that for over 300 years soldiers returning from conflicts have reported a mysterious range of physical symptoms.

This testimony led the Board to identify stress as a major cause of the illnesses reported among soldiers who served in Sector South. In fact, several soldiers reported being diagnosed with PTSD. The Board also found a further category of soldiers who are suffering from ailments that appear to be stress-related. Others are suffering symptoms for which there is no medical explanation. While the cause of their conditions cannot, with one hundred percent certainty, be identified as being their tour in Croatia, the Board has been inexorably drawn to the conclusion that the health problems many have suffered relate to the horrific experiences and conditions experienced in theatre.

CF Establishment – Accommodation practices

> **Finding**: During testimony and visits to CF bases, members at all rank levels revealed apprehension and a general sense of fear regarding the application of the Universality of Service Principle, the term commonly used to describe performance-based employment standards.

Universality of Service as a policy statement has been more typically known as "the soldier first principle." The concept relates to the requirement for CF members to be operationally employable and deployable in addition to performing specific functions of their occupation or the more generic type functions of their environments. Universality of service has its basis in section 33(1) of the *National Defence Act*, which states: "The Regular Force, all units and other elements thereof and all officers and non-commissioned members thereof are at all times liable to perform any lawful duty."

During testimony, the Board learned that well-defined administrative review procedures are in place but no formal policy statement/guidelines are provided. The meaning of the principle is interpreted through its application.

In response to a number of grievances, the Chief of the Defence Staff (CDS) directed A/ADM (HR-Mil) to conduct a comprehensive review of Universality of Service in early 1999. The aim of the review was to recommend a more flexible application of the Principle and to find ways to prevent or reduce some of the perceived negative consequences of the policy. The Board was informed through testimony that the results of this review were presented to Armed Forces Council (AFC) on 19 November 1999. AFC supported and endorsed the review recommendations and approved a draft policy that will go into effect in April 2000. The CDS has also directed that a reasonable time frame be imposed to review the files of members released previously under the current standards.

The strict application of the principle reflects the challenge of maintaining operational effectiveness despite deep cuts in personnel and resources and a sharp increase in the operational tempo. However, human costs must also be recognized in applying the principle of Universality of Service. These costs can be measured in terms of the loss of skilled, competent and experienced people and the personal suffering of individuals after release.

The Canadian Forces should tailor its operational employment policy to the requirements of actual operations. The Canadian Forces should look at its operational needs now and into the foreseeable future, so it can estimate what is required in terms of deployable and operationally employable personnel by MOC and rank, and then look at what remains in spare capacity, to accommodate personnel with career employment limitations. The following examples illustrate existing flexibility:

- a Military Occupational Study Review found 6122 military non-essential positions.
- a search through PeopleSoft highlighted an average of 6219 personnel with medical categories that fall short of their MOC specifications.
- the CF did not track the number of personnel who were retained despite restrictions or employment limitations in the 1970s and 1980s.

The members of the Board believe that a formal policy should be put into effect and applied consistently. Such action will provide fairer treatment to all. It will also assure service members that their needs, and not just those of the institution, are being considered in the implementation of initiatives such as the current administrative review and release processes.

The Board recommends that a standard and flexible process be tailored for all military occupations to accommodate personnel who can still be gainfully employed.

CF Assignment System – Release Process

Finding: CF members who were injured during Op HARMONY or showed serious symptoms following deployment are dissatisfied with their treatment on release from the Canadian Forces.

Witnesses expressed frustration with the slow and confusing bureaucratic process. They also described a sense of abandonment by the system. Some witnesses testified that programs and services seem to be aimed at those leaving the Canadian Forces at the end of a fixed period of service rather than as a result of injury or career employment limitations.

The social safety net is very complex, and few CF members fully understand the technical provisions of these programs. The Board learned that benefits are provided under a number of statutory and commercial plans. The four main benefits, which the disabled/injured CF member may be eligible to receive, are:

- disability pensions and medical benefits under the *Pension Act* for service-related permanent disabilities

- disability pensions under the Canada Pension Plan for permanent total disability

- long-term disability benefits under the SISIP (for total disability)

- disability pensions or cash termination allowances under the *Canadian Forces Superannuation Act* (CFSA) for permanent disability

People join the military with the understanding that the system will take care of them. Many are surprised to discover that the social safety net has "gaps". For example:

- VAC awards compensation for disability arising from service in accordance with the requirements and parameters of the *Pension Act.*

- SISIP compensates only those who are judged to be totally disabled. Service members with partial disabilities are not eligible for payment under SISIP.

The Board heard about some situations where benefits received after a medical release were inadequate. Once released, the member may be forced to live on minimal income while waiting for Service Income Security Insurance Plan (SISIP) and Veteran Affairs Canada (VAC) applications to be processed. Undue financial hardship may result in the long term due to a gap between these programs. The benefits do not always fully make up for what has been suffered in terms of loss of health, loss of income and loss of career. We concur particularly with paragraphs 88, 89, 96, and 100 of the Stow Report, 1997.

The *Pension Act* and SISIP need to be reviewed independently to ensure that adequate compensation is available in all cases, not just for disabilities, but also for loss of income and loss of career. On this last point, vocational rehabilitation (retraining) ought to be provided.

Throughout their career, CF members have been provided with clear directions on administrative and operational issues. But as members approach the release point and become psychologically vulnerable, testimony revealed that DND/CF then appears to act as if those same members have now become "customers" rather than "clients." The Board believes that DND/CF must continue to guide or act as an "agent" for all members being released and ensure that the member remains on full strength until such time as the member's departure can be conducted in a manner that recognizes the service the member has given to the country.

The Board believes that to provide the proper care, a continuum of information is required amongst DND, VAC, and SISIP (with the main thrust concentrated on The Centre) through a co-ordinated decision making process.

The Board recommends that a seamless and continuous "Fit for Release" process be instituted for all releases – both Regular and Reserve.

CF Assignment – Succession Planning Process

Finding: Testimony indicated a lack of continuity in the movement of personnel during the pre- and post-deployment phases of operations conducted in Croatia.

Commanding Officers at all levels expressed their concerns with the impact of CF personnel moving in and out of units from different parts of the country once their unit had been tasked with a peace support operation. The establishment of ad hoc units and sub-units and the high number of individual augmentations added to the tension. CF members who testified complained about the increased tempo during the pre-deployment training and upon return. The need to attend career courses, resume collective training and provide augmentee personnel for taskings immediately following deployment added to the stress already imposed on members.

The Canadian Forces have changed rapidly over the past decade due to the sharp rate of personnel downsizing, the reduced funding level for postings and the increase in CF operational taskings. The management of individual careers will have to evolve and adapt not only to changing socio-economic conditions (Quality of Life initiatives) but also to the CF operational constraints imposed on members. It is essential that we understand the dynamics that cause the movement/assignment of personnel, the needs of the commands and the expectations of the members so that the right person is available to do the right job at the right time.

The Board recommends that posting and movement of individuals complement and reinforce the unit's operational cycle in order to preserve its integrity.

CF Assignment – Advanced Surgical Teams (AST)

Finding: The lack of surgical support in theatre was a cause of great concern to CF members serving in theatre.

Commanding Officers and Medical Officers testified about the lack of surgical support in theatre. When the Canadian AST was withdrawn, casualties had to be transported a considerable distance by ground. As a result, it was unlikely that Canadian casualties would receive advanced surgical care within the hour. Combined with the stress of working in a high-risk environment, which included de-mining operations and being shelled, this situation was a cause of great concern.

In a high-risk operational environment, it is essential that advanced surgical services be readily available. The equipment and training of a general duty medical officer are not adequate to sustain life indefinitely in cases of severe injury with significant blood loss. Soldiers, medical staff and Commanding Officers were greatly concerned about the lack of an advanced surgical team in the area of operation. Although

adequate facilities existed in Knin, air transport was often not available and the lack of snow clearing often prevented land evacuation.

The Board recommends that advanced surgical teams be assigned in high-risk theatres of operation whenever a coalition force fails to meet our standards of Health Services Support.

CF Individual Training and Education System - Physical and Mental Health

Finding: In general, CF members are poorly informed about mental health issues and the link between physical and mental health.

The Board heard testimony indicating an appalling lack of knowledge about mental health by CF members at all rank levels. Understandably, most knew little about unusual stress-related illnesses such as post-traumatic stress disorder and functional somatic syndromes. Many were also unfamiliar with more widely publicized issues such as depression and the strong link between physical and mental health. This leads to very destructive attitudes which have on at least one occasion led to suicide by the person affected. Although a "can do" attitude is required to maintain a cohesive fighting unit, it is also important to understand that illness, whether physical or mental, can make it impossible for a person to contribute to the success of a mission.

There also appears to be a problem with understanding the limitations imposed by physical and mental illness. Sometimes, it is not possible for an individual to contribute to the mission's success. This lack of understanding has led some Commanding Officers to override medical limitations advised by the Medical Officer.

Health care staff also need to be educated regarding mental illness. CF members are often reluctant to raise mental health issues due to concern about career consequences. A higher index of suspicion is required when dealing with military members for this reason. Mental health education should be mandatory on all leadership courses to counter ill-informed attitudes. This education must begin at the leadership level.

The Board heard from many people who had significant misgivings about the integrity of medical confidentiality in the Canadian Forces. Commanding Officers have the right to access the medical information of members under their command on a "need-to-know" basis. This right has often been delegated far down the chain of command. As a result, this has led to reluctance among military members to seek treatment within the military medical system.

The Board recommends the following:

Change attitudes and improve procedures across the Canadian Forces on mental and physical health issues and programs.

Improve CF and VAC medical staffs' education and awareness regarding mental health issues.

Educate Commanding Officers on their responsibilities and accountabilities for the maintenance of medical confidentiality.

CF Individual Training and Education System - Second Career Assistance Network

Finding: Second Career Assistance Network (SCAN) seminars are largely aimed at those reaching compulsory retirement age and are less relevant to service members who are being released on medical grounds.

The Board heard complaints that SCAN seminars do not address issues of importance to CF members facing medical release. It would appear that many CF members are not aware of their entitlements to, and the limitations of, both VAC and SISIP coverage.

Seminars should include, but not be restricted to, up-to-date DND and VAC services provided on compensation and benefits, disability and life insurance, personnel and casualty support and administration, and loss of income protection. CF members enter the military with the understanding that the system will take care of them. It comes as a great surprise to many to find that holes exist in the social safety net. Although this Board is recommending that many benefits be re-examined, CF members must be aware of their entitlements and the limitations of these plans.

The Board recommends that Second Career Assistance Network seminars be conducted so that all CF members attend at least one every five years.

CF Individual Training and Education System - Professional Development

Finding: Specific education is lacking in P Med Tech training and Critical Incident Stress Debriefing (CISD).

The shortage of P Med Techs trained to the QL 6A level is acute. The Board learned that the current situation is due to a general shortage of P Med Techs, a lack of personnel to provide training and the decision to require only QL 5A-qualified P Med Techs on most deployments. P Med Techs trained to the QL 6A level are qualified to perform comprehensive assessments of occupational and environmental health hazards. The presence in Croatia of a properly equipped, professionally supported QL 6A-trained P Med Tech would have prevented much of the present concern about environmental exposure.

With respect to CISD, stress debriefing must be administered as quickly as possible after traumatic incidents. For that reason, the Canadian Forces requires more personnel trained as critical incident stress debriefers.

The Board recommends the following:

> ***Ensure that adequate personnel, including P Med Tech QL 6A-qualified, are deployed to address occupational health and safety issues.***
>
> ***Cross-train medical officers and padres to be critical incident stress debriefers, and train volunteer peer counsellors at all ranks.***

CF Health System - Health Records

> **Finding**: There are no clear rules on what information may be placed on a medical file.

Currently, no rules or guidelines denote the type and range of information placed on the medical records of CF members. Although occurrences are rare, environmental exposure to toxins can influence the development of medical problems. During testimony, the Board heard that letters noting possible environmental exposure to toxins were placed on the files of soldiers who served in Croatia. The letters did not confirm whether each individual were in fact exposed, the degree to which exposure occurred, or what the effects of the exposure were likely to be. Such details are critical to provide guidance for proper care and to avoid undue anxiety among service members.

Medical personnel routinely record known health risks (e.g. smoking) on patients' charts. However, they do not record details of deployments out of country and traumatic experiences, although these events can lead to unique medical problems, including stress-induced illnesses. This information would be helpful if it was recorded prominently on patients' charts.

Veterans seeking compensation often wait for a long time for assessment by both VAC and SISIP. The difficulty in accessing CF medical records contributes significantly to these delays. Many units simply do not have enough personnel to process requests quickly. Moreover, military medical files tend to be larger than those accumulated by civilians because they also contain a record of hospital treatment. The Board has also heard that in some instances, the Centre for the Support of Injured and Retired Members and their Families has arranged to mail entire files to VAC. While this action has helped to shorten the assessment period from 18 months to 18 weeks, the absence of records could impede treatment at the home unit. A possible solution would be to target resources to home units to allow immediate creation of duplicate records when the need arises.

The Board recommends the following:

If a member has been exposed to contamination, accurate information as to the type, duration, degree of exposure and any related health risks must be placed on the member's file based on clear directions.

Ensure better information sharing among the CF, VAC and SISIP, with the aim of reducing the gap between the end of military service and the start of benefits.

Where the member consents, ensure the timely sharing of the CF medical file with SISIP and VAC.

CF Health System - Medical Assessment and Treatment

Finding: Soldiers are reluctant to seek treatment from the military medical system.

Some soldiers reported visiting civilian medical facilities; others admitted they do not seek care at all. Witnesses gave three reasons for avoiding military medical services:

- **Concerns over the lack of confidentiality** – As discussed previously, Commanding Officers have the right to access the medical files of personnel under their command on a "need-to-know basis." In many units, this right appears to be delegated a long way down the chain, leading to a loss of privacy and confidence among CF members.

- **The perception that the medical community polices Universality of Service** – Military medical staff conduct the periodic health examinations at which time CF members must sign a statement that they meet the Universality of Service requirements. As a result, the CF medical community is perceived as the watchdog for this inflexible policy.

- **The perceived conflict of interest between the doctor's role as advocate for the patient and for the employer** – Suspicion is inevitable in a system in which health services personnel have a responsibility to both the member and the employer. The military's reluctance to accommodate individuals with minor physical limitations intensifies this perception.

Finding: The medical assessments administered to CF members prior to and subsequent to their deployments were inadequate.

These medical assessments are similar to the examinations conducted periodically to ensure the health of CF members. Such "routine" examinations offer only limited value in detecting or preventing the sorts of injuries that can occur on overseas missions. Current assessments may not detect psychological injuries that should be

identified before deployment. Nor are they likely to detect those that may be present after deployment. The development of more detailed psychological assessments would help to identify injuries at an earlier stage and decrease their severity.

During testimony, the Board heard many accounts of illness. Some people who came forward suffered from well-defined physical conditions. Others had been diagnosed with stress-induced illnesses, some with a severe form – post-traumatic stress disorder. A third group reported physical symptoms that continue to elude medical diagnosis. This group remains a long-term diagnostic and treatment challenge. Two medical specialists who deal with medically unexplained physical symptoms (MUPS) testified. Many syndromes, reported in both the military and civilian world, fall into this category. To investigate and treat them, the physician must rule out serious physical or mental illness and form a "therapeutic alliance" with the patient. The goal of this alliance is to treat the symptoms rather than search endlessly for a cure.

Unfortunately, the CF medical system has difficulty supporting the close doctor–patient relationship that MUPS patients need due to reasons that include the current shortage of physicians, the frequency of both patient and physician postings and the short-term engagement of many physicians.

Providing appropriate care to those with MUPS requires considerable resources and understanding. MUPS patients often display a wide variety of symptoms and show poor response to therapy. This can lead to frustration among health care providers and patients. More education is needed to change the negative attitudes that exist in the medical community today toward MUPS patients.

The physician–patient relationship cannot be created in the current CF medical system with the present physician shortage and hence frequent absence of physicians who must be away from base on various taskings. The resource implications required to increase continuity of care should not be underestimated. There is also a need for medical staff education regarding the care of people with this problem.

The Board recommends the following:

Conduct more detailed medical examinations before and after deployments.

Ensure that medical assessments address risk factors and signs of stress-induced illness.

Ensure that those people with medically unexplained physical symptoms receive the appropriate treatment.

CF Health System - Health Surveillance and Disease Prevention/Health Promotion

Finding: More resources are needed to provide ongoing military health surveillance and disease prevention/health promotion.

It is very difficult to investigate the health effects of environmental exposure after the issue has received wide media attention. That is one of the lessons learned from the medical studies conducted into "Gulf War Syndrome." The Gulf War studies became biased as people developed and recalled non-specific symptoms in response to suggestions of illness. Experts told the Board that incidents of illness by suggestion are far from unusual.

An ongoing assessment of the physical and mental health of service members would enable the Canadian Forces to identify harmful trends, monitor the success of health promotion programs and minimize bias in the investigation of any future health concerns

Forms of surveillance that could be considered include health surveys and electronic health records. Health surveys provide the opportunity to record a wide variety of information such as risk factors, health beliefs and diagnosed disease. The Canadian Forces Health and Lifestyle Information Survey could be repeated on a regular basis with supplementary assessments of stressors and emphasis on occupational health. Direct comparability with health trends in the general Canadian population is needed. This could be compared with the national health survey of the general Canadian population which is done every two years.

An electronic health record could provide quick analysis of the current recorded health status of CF members. Combining the health record with a human resource database, the Canadian Forces could quickly determine the incidence of recorded disease among identifiable groups (e.g. the incidence of cancer among veterans of a specific peace support mission) or determine within hours if a previous UN tour had a deleterious health outcome. Various provincial governments are already using electronic diagnostic billing information to assess the prevalence of diseases such as diabetes.

Board members noted that exposures to traumatic events and deployments out of country are not identified readily on medical charts. As some of these may lead to unique medical problems, they need to be noted prominently in medical charts.

The best health data in the world hold little value unless they can be analyzed and used to prevent disease and promote health. Unfortunately, the Canadian Forces lacks adequate staff in preventive medicine and health promotion areas to monitor and act on health trends. For example, two areas of concern were noted during testimony:

- A survey of CF members who served in Croatia during Roto 2 showed that their rate of depression was higher than that reported in the general population, even before deployment.

- The Goss Gilroy Inc. study of Gulf War veterans found that the CF control population reported a higher prevalence of some conditions such as skin and digestive problems compared to the general Ontario population.

The studies cited are cause for some alarm. Members of the Canadian Forces comprise a screened working population. Therefore, the prevalence of health conditions should be lower than that reported in the population at large. It would appear from testimony, however, that the Canadian Forces have a limited capability to act on health problems identified at the population level. Similarly, the capability to respond to occupational and environmental health threats in Canada and during overseas deployments is also restricted.

Therefore, the Canadian Forces require the following:

- human and technical resources to develop the capabilities needed to analyze data from surveys
- an electronic health record to produce useful health information
- the resources to address CF personnel health problems identified at the population level
- an improved capability to respond to occupational and environmental health threats in theatre and in Canada

The Board recommends the following:

- ***Conduct periodic health surveys of retired and serving CF members with emphasis on those personnel subject to deployments.***
- ***Create an electronic health record system including all CF members.***
- ***Annotate individual medical files to reflect all operational missions undertaken.***
- ***Rebuild preventive medicine/health protection capability within the Canadian Forces.***

CF Logistics

Finding: Basic supplies and equipment were often in short supply during the mission in Croatia.

In some cases the United Nations was responsible for providing material; in others, the responsibility remained with the Canadian Forces. On numerous occasions,

the battalion on rotation could see the supplies they desperately needed in the UN compound, but were refused access to them.

Examples of shortages brought to the attention of the Board included:

- Defensive stores – although the soldiers of Op HARMONY were shelled and fired on directly, they were unable to obtain sufficient defensive stores, such as sandbags and lumber for protection.

- Water supplies – It took weeks for the P Med Tech on Roto 4 to convince the United Nations that the water on distribution was contaminated. The United Nations reluctantly conducted tests and agreed. Only bacteriological analysis was carried out since both the United Nations and the battalion group lacked the capability to conduct chemical analysis. The use of a Reverse Osmosis Water Purification Unit (ROWPU) would have negated the risk of chemical contamination. Although the battalion was equipped with a ROWPU, the supply system could not provide the filters needed to run it.

- Bomb blast blankets – Armoured personnel carrier drivers needed these because their vehicles did not provide adequate protection against mine explosions.

- Blast boots – Engineers conducting de-mining operations could not get blast boots.

- Personal Kit – Soldiers leaving the theatre of operations had to hand over their anti-fragmentation jackets, their personal weapons and their helmets at the airport. This is clear evidence of the serious supply problems that continued in theatre.

- Body bags – In what is perhaps the single most bizarre incident of Op HARMONY, the supply system demanded that used body bags be returned to stores from the morgue.

Soldiers in Croatia were caught between the UN's inability to move supplies within a reasonable period of time and the Canadian military supply system's refusal to provide materiel because the responsibility rested with the United Nations. These supply shortages were just one additional stressor in a high-risk environment.

The Board recommends that Canada ensures that it is accountable for the provision of materiel in all theatres of operation, even if others are responsible.

We also recommend that Canada ensure that CF personnel are fully kitted-out in Canada before proceeding overseas.

SUMMARY OF RECOMMENDATIONS

General

1. Ensure that the personnel of 2 PPCLI Battalion Group and 1 R22eR Battalion Group who served in Sector South receive the proposed "Commander-in-Chief's Commendation" in recognition of their exemplary service.

Employment

2. Approve all changes and variations to mandates by the accountable level of command.

3. Establish that the size and structure of deployed forces must be based on operational requirements and not imposed troop ceilings.

4. Ensure that all deployed CF contingents and units have the human and technical means to collect, process and analyze intelligence and provide resources to assess pre-deployment environmental threats.

5. Protect the integrity of units upon their return to Canada.

6. Include integral stress debriefing teams to accompany CF troops through all three phases of unit employment.

Protection

7. Institute the draft Environmental Health Policy and Procedures for Deployed Operations.

8. Ensure that more than one Preventive Medicine Technician is assigned to each rotation. Also, ensure that the proper testing equipment and trained staff to investigate environmental concerns are provided.

9. Provide, where water quality is an issue, a water purification capability, such as a Reverse Osmosis Water Purification Unit (ROWPU), to ensure quality of water from both bacterial and chemical points of view.

10. Designate J3 nuclear, biological and chemical (NBC) as the lead operational point of contact responsible for all environmental issues and concerns.

11. Conduct consistent reconnaissance for all missions which covers all potential hazards to CF personnel and ensure that an "Environmental Risk Assessment" is included in operational planning.

Sustainment

12. Tailor a standard and flexible process for all military occupations to accommodate personnel who can still be gainfully employed.

13. Institute a seamless and continuous "Fit for Release" process for all releases – both Regular and Reserve.

14. Posting and movement of individuals must complement and reinforce the unit's operational cycle.

15. Assign advanced surgical teams in high-risk theatres of operation whenever a coalition force fails to meet our standards of Health Services Support.

16. Change attitudes and improve procedures across the Canadian Forces on mental and physical health issues and programs.

17. Improve CF and VAC medical staffs' education and awareness regarding mental health issues.

18. Educate Commanding Officers on their responsibilities and accountabilities for the maintenance of medical confidentiality.

19. Conduct Second Career Assistance Network seminars so all CF members attend at least one every five years.

20. Ensure that adequate personnel, including P Med Tech QL 6A-qualified, are deployed to address occupational health and safety issues.

21. Cross-train medical officers and padres to be Critical Incident Stress Debriefers and train "peer counsellors" at all rank levels.

22. If a member has been exposed to contamination, accurate information as to the type, duration, degree of exposure and any related health risks must be placed on the member's file based on clear directions.

23. Ensure better information sharing among the CF, VAC and SISIP, with the aim of reducing the gap between the end of military service and the start of benefits.

24. Where the member consents, ensure the timely sharing of the CF medical file with SISIP and VAC.

25. Conduct more detailed medical examinations before and after deployments.

26. Ensure that medical assessments address risk factors and signs of stress-induced illness.

27. Ensure that those people with medically unexplained physical symptoms receive the appropriate treatment.

28. Conduct periodic health surveys of retired and serving CF members with emphasis on those personnel subject to deployments.

29. Create an electronic health record including all CF members.

30. Annotate individual medical files to reflect all operational missions undertaken.

31. Rebuild preventive medicine/health protection capability within the Canadian Forces.

32. Ensure that Canada is accountable for the provision of materiel in all theatres of operation, even if others are responsible.

33. Ensure that CF personnel are fully kitted-out in Canada before proceeding overseas.

OBSERVATIONS

During our investigation, the BOI was able to make a number of observations that we feel are important enough to pass on to the Convening Authority. The issues we are observing upon are not necessarily within the defined or expanded mandate of the Board; however, given the experience level and unique perspective of this group of people, these observations may prove to be of value to DND in one way or another.

Quality Database - There is a need for a robust human resources database for the defence team to manage personnel information on all components of the Canadian Forces. The Board experienced significant difficulty trying to gather information to confirm the list of Veterans of Croatia. Board members were forced to rely on several sources of information such as the CF Tasking Program, PeopleSoft, the Personnel Management Information System - PMIS 2000, J1 archives, War Diaries etc. Members who served in Croatia for a period of less than 90 days could not be clearly identified because no official tracking mechanisms existed. We were also unable to access a database of addresses. Excessive concern about violating privacy rights resulted in a lengthy delay, although the situation was eventually resolved in our favour. As the matter stands today, the Canadian Forces does not have a quality database that allows members to be contacted directly, even if it is clearly in their interests. A capability to allow direct contact with people in the field when necessary should be developed.

- **Communications with the field** - Despite the widespread use of computers within the Canadian Forces and the ability for many to access the Internet, many of our members do not have ready access to this method of communication. Indeed, the problem of communicating with the field does not seem to have improved significantly with the technologies that have been designed to do just that. It was our experience that the word of our informal visits to the field did not get around despite support from the chain of command. In the majority of locations, many of the 1400 or so people that came out to talk with us heard about the visit through chance. In cases where we asked about the awareness of the "much publicized" 1-800 number, we found very low percentages of soldiers who had ever heard about it, despite the CANFORGEN directing its distribution. The assumption that everyone reads the Internet is flawed. With the disappearance of more traditional forms of communications, word of important issues is failing to reach soldiers.

- **Mental Health** - There is a far too prevalent attitude in the field that there is no substance to an individual's medical problem unless there are visible symptoms of injury, like a broken leg. This is inhibiting people from seeking help from within their units as a first recourse. Long-term education and positive leadership examples are essential to reduce this problem and positive

leadership examples are essential. For example, Lieutenant-General Dallaire's willingness to discuss his PTSD openly has had an excellent effect on that subject. However, the Canadian Forces, and indeed Canadians in general, have a long way to go toward acknowledging that it is acceptable to admit psychological injuries.

- **Sustainment** - There appears to be a requirement to establish a single operations centre to address all sustainment issues. The Deputy Chief of the Defence Staff (through the Joint staff) functions as the individual responsible for operations. A similar "Chief Supporter" does not exist. Rather, several staffs have responsibilities for operational support issues, and the potential exists for urgent operational support issues to fall through the cracks. Such issues as current and complete personnel databases, pay services, benefits and allowances, transport, quartering, water and food supplies, medical support, conditioning and acclimatization, re-supply and level of resources available to conduct tasks are just a few examples where a common approach in assessing the needs of the Forces and/or the troops would be much improved.

- **Medical Assessment** - The authority vested in Commanding Officers to override a medical officer's recommendation is a concern raised by many in the field. Similarly, concern has been expressed to us that medical officers do not always consider the unit's responsibilities when they provide their recommendation to the Commanding Officer. This potential conflict is disconcerting to CF members as a medical professional's recommendation to facilitate healing can be openly disregarded, yet the Canadian Forces is not an accommodating employer if an injury does not heal. Accountabilities need to be defined in this area and a better balance maintained.

- **Medical Patient Holding List** - The traditional support for an individual soldier evident within operational units in the past has virtually disappeared. The continual pressure to maintain 100 percent of the unit's personnel at combat-ready status has eroded the Commanding Officer's ability to manage the welfare of his or her own people. For example, there is pressure to move people who have medical disabilities quickly to the Medical Patient Holding List in order to replace them with healthy soldiers. This results in a perception that the Commanding Officer does not care for his or her people. We heard from soldiers who did not receive a single visit or word of support from their units during the time they were on the list, or during treatment for PTSD. Left unchecked, this lack of support will eventually erode morale and loyalty.

- **Senior Advisory Group** - There appears to be some confusion with respect to transmitting information to the political level dealing with the short- and long-term effects of participating in peace support operations. An interdepartmental group that includes representation from at least DND, Department of Foreign Affairs and International Trade, Treasury Board and Solicitor General should

be formed as a collective channel to provide advice and information to the senior political level.

- **Operational Planning Process** - The same Joint staff at NDHQ performs the planning functions of both the strategic and operational levels. There are circumstances where the functions of these levels can have differing objectives. To restore the natural checks and balances inherent in the planning process, these two planning levels should be separated.

- **CF Doctrine**. - Based on the best lessons learned over many years, CF doctrine should be adhered to both to protect our soldiers and to ensure the achievement of the mission. When doctrine is deviated from, it must be with due awareness of the impact it will have. The level of command that makes the conscious decision to deviate from established doctrine must be prepared to accept accountability for that decision.

- **VAC**. The perception of VAC in the field is very poor. Few VAC staff have peacekeeping experience. This leads many CF veterans to question VAC's ability to adequately assess their claims. This poor perception has an impact on the public impression of VAC as well. When individuals are released due to injuries that they believe result from service, apply for VAC benefits, and are subsequently denied, word spreads quickly. That usually does not happen when benefits are provided. The lack of understanding about the purpose of the program and how it works contributes to the belief that all claims are denied on first application because there is an appeal process. VAC has an official policy of deciding issues in favour of the client when there is doubt. As well, the improvement in average turnaround times for claims, while impressive, needs to continue to improve. Commanding Officers, supervisors and those involved in the release process need to become more knowledgeable about the VAC process and benefits, and ensure that their personnel understand. Similarly, VAC personnel need to become more knowledgeable about the CF and its operational environments, either through education or by hiring CF veterans with peacekeeping experience.

- **SISIP** - The perception of SISIP in the field is absolutely terrible among those who have applied for benefits and been denied, and among their friends. The mass briefings conducted by SISIP personnel are insufficient to inform the soldiers of their rights and benefits. Many members believe they have blanket coverage to protect them against long-term disability. When they discover that they do not qualify for SISIP benefits, even though they have been released as medically not employable, they become very angry and disillusioned. Commanding Officers and supervisors must become more aware of SISIP rules so they can provide their personnel with accurate advice.

- **Medical Support** - Confusion abounds in the field concerning the roles of the military medical community. Soldiers are unclear whether the purpose of the

military medical system is to take care of the soldiers' medical needs or to police the Universality of Service regulations and inform Commanding Officers about problems. This leads to a reluctance to approach the medical service for help. In the end, the fear of the consequences of revealing medical information seriously jeopardizes the trust the soldiers must have in the system. It appears to the Board members that many members of the military medical community recognize this problem and are strong advocates for removing themselves from the process of determining a member's employability.

- **Visit to Croatia and the United Nations** - The Board had originally planned to visit Croatia to view the sites where Canadian soldiers operated and examine the locations where soil samples were taken. Unfortunately, the Croatian government withheld permission for our visit, although we received earlier indications of approval. As a result, the trip was cancelled at the last minute. While a disappointment, this did not affect our ability to reach a valid conclusion of the investigation. In a similar case, a visit to the United Nations in New York planned by one of our support staff had to be cancelled because of delays in approval. Again, due the significant amount of documentation available to us, this did not inhibit our ability to conduct the investigation.

LONGER-TERM STUDIES

In reviewing the evidence, the Board has made a conscious decision to recommend those actions that can be implemented in the near term. There are, however, some issues that should be examined over time. These include:

- designing a new system to decrease the effects of operational stress on deployed personnel, thereby reducing the number of preventable operational stress losses in the Canadian Forces. The system should be based on the principles of current combat stress reaction doctrine, modified for use by the Canadian Forces.

- addressing simultaneously joint command and control issues and requirements from an organizational, procedural and technical perspective.

- determining the number of deployed troops that can be sustained from the current force structure.

- developing areas of cooperation with the Royal Canadian Legion, the Army, Navy & Air Force Veterans in Canada, the Canadian Peacekeeping Veterans Association, etc., in support of our peacekeeping veterans.

CONCLUSIONS

This Board has concluded that:

- There is no scientific proof that the soil in Croatia, specifically Sector South, contained contaminants in sufficient quantities to cause serious health hazards to the CF members who served there between 1993 and 1995. However, the Board was unable to rule out environmental contaminants entirely as a possible cause of at least some of the symptoms reported by Canadian veterans of Op HARMONY.

- Many veterans of Op HARMONY suffer from a range of symptoms that result directly from their service in Croatia. It is highly probable that at least some of these symptoms result from the very high level of chronic stress experienced during the operation. With the proper acknowledgement of the relationship between service and symptom, treatment can be provided to alleviate many of the symptoms of illness.

- The system in place to provide care for those suffering from stress-related injury was insufficient following Op HARMONY and continues to be insufficient today. However, progress has been made in raising awareness about the health effects associated with service in high-intensity operations and planned changes to the CF Medical Services will dramatically improve service in this area. Nonetheless, continued vigilance is necessary to ensure proper care is provided.

- The Department of National Defence and the Department of Veterans Affairs are both responsible and accountable on behalf of all Canadians for providing the proper care for injured soldiers and adequate support to all military personnel.

- The Department of National Defence can reduce the frequency and severity of casualties by decreasing the impact of a number of stressors. A scientific study is needed to determine the frequency to which individuals can be subjected safely to high-intensity peace support tours. Unnecessary stressors, such as the unavailability of clean water, the absence of advanced surgical care and inadequate equipment must be countered.

APPENDIX A

TERMS OF REFERENCE FOR THE BOARD OF INQUIRY – CROATIA

National Defence / Défense nationale

Assistant Deputy Minister (Human Resources - Military) / Sous-ministre adjoint (Ressources humaines - Militaires)

National Defence Headquarters, Ottawa, Canada K1A 0K2 / Quartier général de la Défense nationale, Ottawa, Canada K1A 0K2

1080-99003 (ADM (HR-Mil))

16 August 1999

Distribution List

TERMS OF REFERENCE—BOARD OF INQUIRY POTENTIAL EXPOSURE OF CANADIAN FORCES PERSONNEL TO CONTAMINATED ENVIRONMENT—CROATIA 1993 - 1995
AMENDMENT # 2

References: A. *National Defence Act*, Section 45
B. QR&O Chapter 21
C. CFAO 21-9

1. A Board of Inquiry (BOI) shall assemble at the call of the President, but not later than 15 Aug, 1999 to investigate whether Canadian Forces (CF) members serving in the Canadian Contingent United Nations Protection Force (CC UNPROFOR) and assigned to the area of operations commonly referred to as "Sector South" during the period 1993 to 1995, were exposed to environmental contaminants in quantities sufficient enough to pose a health hazard during the course of their duties. The BOI shall be conducted in accordance with references A through C.

2. The BOI shall be composed as follows:

a. Board

President	Colonel G. E. Sharpe;
Member	Lieutenant-Colonel B. Sutherland;
Member	Major J. P. Caron;
Member	Major D. W. F. Widdow;
Member	Master Warrant Officer (Ret'd) M. Spellen; and
Member	Inspector R. A. Bonvie, Royal Canadian Mounted Police.

b. Specialist Advisers to the Board

(1) External

Medical – TBA

Canada

Technical/Environmental – TBA

(2) Internal

Public Affairs - Lieutenant-Colonel J. Tremblay
Legal – Commander J. Harrigan

e. Administrative Support to the Board.

3. Commander J. Harrigan, of the office of the Department of National Defence/Canadian Forces Legal Advisor (DND/CFLA) (Department of Justice), will coordinate legal advice from DND/CFLA and the office of the Judge Advocate General (JAG). External expertise in the areas of health and environment will be sought as the Board progresses and specific requirements are identified.

4. Pursuant to Queen's Regulations and Orders (QR&O) 21.12, the Office of the Ombudsman is authorised to have a representative present at the proceedings as an observer.

5. In the course of investigating, the BOI shall gather all relevant information including the findings of any previous investigations or studies including but not limited to the formal environmental assessment directed by the Deputy Chief of the Defence Staff (DCDS). The BOI shall take any further action required to produce a comprehensive environmental assessment of suspected contaminated sites with respect to soil, mine tailings, and air and water sources at sites occupied by CC UNPROFOR personnel serving in "Sector South" during the period 1993-1995. Statements shall be obtained and recorded from all pertinent and available witnesses.

6. Without limiting the scope of the BOI, the BOI shall gather evidence and make findings and recommendations in respect of the following matters related to contamination:

a. identify all sites in "Sector South" occupied by CC UNPROFOR personnel which contain or contained at the relevant time contaminants in quantities or levels of concentration sufficient to pose a health hazard;

b. with respect to each contaminated site, identify each type of contaminant including an assessment of the health hazards associated with each contaminant at the level or levels identified, and

c. with respect to each contaminated site, identify who, if anyone from the CF, was at risk of exposure or potential exposure to hazardous levels with respect to each site and each contaminant.

7. Without limiting the scope of the BOI, the BOI shall provide findings and recommendations in respect of the following matters:

a. how exposure or potential exposure to contaminants was assessed, recorded and documented, and what protective measures were taken in-theatre to address any health and safety concerns identified;

b. the requirement for any additional or corrective measures to address any recognized deficiency in the administration of service records related to the deployments in "Sector South" in Croatia during the period 1993-1995; and

c. what measures are required for incorporation in the planning and preparation phase for future deployments to improve procedures for the early detection and documentation of environmental hazards, and in that regard, protection of CF members serving in the area of operations.

In addition, the BOI may make findings and recommendations on any other relevant matter arising from its inquiry.

8. Where a prospective witness:

a. is currently the subject of a criminal (police) investigation;

b. has been or is about to be charged with an offence under the *National Defence Act* or other Canadian law; and

c. has been arrested/detained in respect of an alleged act or omission which could constitute such an offence,

such a prospective witness shall not be compelled to give evidence before a BOI in relation to the subject matter of the police investigation, charge, arrest or detention. Where the gathering of such evidence is deemed critical to the successful completion of the investigation, the authority which ordered the investigation shall be notified and legal advice sought prior to any action to compel such testimony, recognizing that compelling such testimony in such circumstances could have the effect of jeopardizing subsequent disciplinary proceedings. If it appears to the BOI at any time that evidence may justify the laying of a charge, the BOI shall cease its activities, notify the convening authority and seek advice of the legal advisor to the BOI prior to taking any further action.

9. The Financial Coding is 2282 KQ L101 I/O 2201260. Expenditures are to be tracked and reported to the convening authority on a monthly basis.

10. Subject to the *Access to Information Act* and the *Privacy Act*, the minutes of the proceedings of the BOI (including findings and recommendations) and the interim reports shall be available to the public. The Minutes of Proceedings for the BOI shall be unclassified.

11. The BOI shall provide to the Convening Authority an interim report on all aspects of this inquiry 1 October 1999 and monthly thereafter. The final report shall be delivered to the Convening Authority for review and onward transmission to the Chief of the Defence Staff (CDS) as soon as possible.

V. M. Caines
LGen
ADM (HR - Mil)
992-7582

Distribution List

Action

President of the Board

Information

CDS
DM
VCDS
DCDS
CLS
ADM (IE)
JAG
DND/CFLA
DGPA
COS ADM HR

APPENDIX B

METHODOLOGY – CONDUCT OF BOARD

"This is a fact finding mission…to find out what is affecting so many of our soldiers who served in a very risky and hostile environment in Croatia…The Board has a great challenge. It is like building a giant jigsaw puzzle in a methodical way. We depend on our members to come forward to help us figure out the puzzle. This s a team effort, a Canadian Forces effort. The success of the Board depends in great part on how many members are willing to contribute"

Colonel G.E. Sharpe
Board President

General

When all supporting staff reported for duty in August 1999, and facilities and equipment were allocated, board members gathered from all available sources the relevant information concerning matters pertinent to their mission and the reported cases of illness. Accordingly, board members focused their efforts and attention on several fronts – Human Resources & Medical Support, Operations & Staffing, Environment & Engineering, and Materiel. We analyzed our findings through specific "filters" such as policies, processes, organizational structure and people, and we came up with key deductions that lead to a series of recommendations. This concept of operations and the use of the Departmental Decision-making Support Centre (facilities & software applications) allowed board members to concentrate on the key factors and remain focused throughout their deliberations.

After three months of information gathering and visits to all major bases across the country, board members began their deliberations in order to produce the report for the Convening Authority by the self-imposed deadline, namely mid-December 1999. Due to some delays in receiving the results from an expert witness on toxicology, and hearing testimonies from representatives from Health Canada & Veterans Affairs Canada, the Board of Inquiry submitted its final report and all documentation by January 26, 2000. A complete record of all proceedings, documents gathered and administrative files have been maintained and properly archived.

Information Gathering

The Board of Inquiry divided its information-gathering process in four (4) phases. It initially held a series of technical briefs to properly understand proceedings, acquire essential background information and understand the numerous issues and stressors confronting the CF members on deployment to Croatia between 1991 and 1995. These briefings were recorded, kept and indexed. Board members then needed to know how many CF members went to Croatia between 1991 and 1995, and more specifically who, when and where they went. Amongst other objectives, if soil samplings would have shown contamination levels, this type of information could have eventually helped establish the patterns with military members who manifested health problems during or upon their return from theatre. A database was

therefore set-up to contain the list of CF personnel (both Regular and Reserve components) who served in Croatia. It also included members providing command, control, communication and support in theatre and listed against other operations, such as Op SPEAKER and Op MANDARIN.

During the second phase of its process, the Board listened to operational briefings and testimonies in order to "map & chart" the course of events of Canadian units in Croatia, specifically in Sectors West and South. The initial testimonies referred to the specific deployments that took place from April 1993 to October 1994 (Op HARMONY Rotations 2, 3 and 4). Board members then looked at the broader picture throughout all areas of operations in Croatia, in the Balkans and in some other theatre of operations, during the period of 1991-1995.

Finally, spread throughout the duration of the Board, and based on availability, the Commission received testimonies from subject matter experts in all fields pertaining to the "fronts" previously discussed. During the course of the hearings, it became evident that in certain cases, board members needed to pursue further the technical aspects raised by the witnesses. In total, more than 120 persons came forward to address the Board. All testimonies were analyzed along with more than 140 exhibits presented as evidence.

Information Management

To ensure the success of the mission, board members decided to operate within an information management, information technology (IM/IT) environment that would allow them, the supporting staff and all witnesses (operational, technical and subject matter experts) to gain rapid access to all available documentation pertaining to the mandate of the board and defined as Knowledge Base (KB). The KB included such reference materiel as War Diaries, DND/CF records, studies, reports, statistics etc. More than 250,000 documents were analyzed, collated, scanned and indexed by the supporting staff.

With respect to the total number of military personnel who deployed to Croatia during the period 1991-1995, the information captured into the database show 8959 Regular and Reserve, Serving and Retired members. Those personnel released since their deployment(s) are also indicated. As the Board activities unfolded and as the Inquiry was getting national coverage, the support staff started to receive calls from former and serving CF members. Many of them shared their illness symptoms with the designated staff. Immediately these symptoms were captured for statistics and later entered into the protected (need to know basis) database. Information gathered on personnel included the standard particulars such as name, rank, service number, unit etc. *Their current address and health symptoms were included only if they agreed, and were never shared with any other personnel database.* Information related to their tour in theatre such as the unit, the rotation and the operation name were also gathered with reasonable success. Company/squadron and platoon/troop information was collated for many units but time constraints led us to focus on particular rotations.

With respect to personnel information of the members who deployed to Croatia, more information which was not originally gathered was sought, such as members who served in

Croatia on a different operation, those who have supported Op HARMONY from a different location in Croatia, and information on released members (release item, new address etc). This caused the collation cycle to repeat itself with an increasing list of people as time went on, but the usefulness of the information is unquestionable. A good example is that approximately 20% of all serving members in Croatia did more than one tour of duty in that same region.

The excellent support of CF staff on loan from Mapping and Charting Establishment in the early days of the inquiry allowed board members to capture, by rotation, the concentrations of Canadian troops in Croatia on digital maps, and enter the results as exhibits before the Board. If contamination levels with the soil samplings had been confirmed, Board members would have then consolidated the results with the actual deployment of troops on the ground. This task was not warranted based on the toxicologist's report.

It is very easy to appreciate at this stage that when information is incomplete or comes from various sources and arrives at different times in different formats, the task of compiling and validating information is difficult. Even with additional staff, the simple task of getting valid postal codes for personnel addresses took weeks to consolidate.

During the course of the Inquiry, a mail out of nearly 8000 letters were sent to former and serving members whom we were able to get either a complete personal or unit address. About 10% of these ended up having an out of date address and letters were returned to sender. CF members, contacting the board through our Internet Web site specifically set-up for that purpose, corrected some of these addresses. Much work is yet to be done just to maintain accurate contact lists. The impact of not being able to reach everyone with a simple letter may be alarming in itself but does not hinder any kind of conclusion at which the Board arrived. The number of personnel collated during the inquiry is extremely close to reality considering the units involved and their strengths at the time.

Information Technology

The better part of the IT support provided was in the form of a separate Protected B Intranet hosting testimony transcripts, archived documents as well as the majority of the many exhibits brought before the board. This system became a Decision Support tool queried and searched through a custom built WEB application. This system alone reduced research times dramatically. The WEB-Based Decision Support System enabled the Board members to focus on those key documents that would help them complete their mandate.

Using the WEB application designed specifically for the Board, members and support staff were able to search either through full text keyword searches or using the index by which all legacy and exhibit documentation were categorized and stored into the database. These were entered within days of actual hearings and remained online for the duration of this inquiry. In the end, the Board members maximized the benefits of using the WEB-Based Decision Support System. It provided significant help to filter all pertinent information and help them reconstruct the significant events that lead to recommendations.

Most IT related problems faced during the Board's activities merely indicate the challenges of any future team who would be required to follow through with the implementation of the Board's recommendations. The most significant problem associated with the design and implementation of the personnel database *(for the Board's utilization only)* was the absence of a complete list of everyone who served in the Croatian theatre during the targeted period and their current addresses. Given the dates of 1991 to 1995, information technology was not nearly as sophisticated as it is today and proprietary, incompatible systems were in use throughout the DND/CF organizations.

The larger legacy systems such as the Military Personnel Information System (MPIS) were not necessarily accessible to the tactical managers. Unit level administrative staff would maintain various personnel information, based on their local requirements and separate from Commands and National Headquarters staff.

Information Technology, as it pertained to databases, follows a set of rules affecting data, which limits data migration to newer and more versatile applications. Consequently, when the PeopleSoft Project began to address these issues aiming at creating a central CF repository of information on its personnel, data migration from the legacy systems to the current PeopleSoft application was not without significant difficulty. Not all data migrated successfully and data updates were sporadic or inconsistent during the entire conversion. This is unfortunate yet understandable since the data entry staff at all levels were either waiting on the new PeopleSoft system to be in place or entered updates in the legacy system which wasn't totally migrated in the end. Based on this historical issue alone, the gathering of personnel data from Op HARMONY time was quite a challenge.

Copies of some incomplete personnel tables were sent to units who had been in theatre to help us gather more information or validate what we had on their personnel. But this was just as difficult for them as it was for us for all the reasons mentioned above. Many of the home grown databases created by the unit administrative staff were unavailable or the records deleted as new members arrived at the unit. These were not official databases and consequently had value only to the staff using them at the time.

Communication & Access to Information

Communicating the work and progress of the Board of Inquiry – Croatia in a timely manner was a priority throughout the entire process. The Terms of Reference to the Board stipulated that: "Subject to the *Access to Information Act* and the *Privacy Act*, the minutes of the proceedings of the Board Of Inquiry (including findings and recommendations) and the interim reports shall be available to the public." While this served as the basis of the communication approach, the Board expanded on this directive to be as open and transparent as possible.

To achieve this aim, the Board used the *Board Of Inquiry – Croatia web site* on the Intranet and Internet as its main tool to communicate timely information. This was complemented by other internal tools and by briefing troops, media and senior managers.

The troops being the primary focus, the Board organised over thirty visits across the country to meet with them. The first series of visits took place during the Board's initial phase to explain the mandate and answer questions and concerns raised by serving and retired Regular and Reserve personnel. The second series of visits was made prior to publicising the findings and recommendations of the provisional report in order to collect members' comments and concerns. A number of articles carried in the Maple Leaf, the CF news service and base newspapers also helped to inform the DND/CF internal public. Similarly, media reports greatly helped in spreading the word and reaching out to the troops. Most of these reports were the result of media briefings in the field or from major media briefings in Ottawa.

The *Board Of Inquiry – Croatia web site* will be maintained active well past the submission of the Final Report of the Board to the Convening Authority.

Service Support

Day to day support to the Board was provided by 4 personnel. The Chief Clerk's numerous responsabilities included travel arangements (for Board members and witnesses), witness coordination and claim processing. The President's secretary, In addition to her normal duties, was responsible for the entries and updates made to the Board's personnel database. The Orderly Room clerk was mainly responsible for the gathering of health and post-operation related information from personnel who had served in Croatia. The Board's Administration Officer ensured the liaison between the Board and other civilian Government agencies, coordinated the hiring of Personal Service Contractors and acted as the Unit Security Officer. Finally the Comptroller staff in ADM (HR-Mil) organisation was responsible for the tracking of expenses and the timely payment of invoices.

APPENDIX C

BOARD OF INQUIRY MEMBERS AND STAFF

Board President
Colonel G.E. Sharpe

Members
Lieutenant-Colonel B.A. Sutherland
Major J.P. Caron
Major D.W.F.Widdows
Master Warrant Officer L.M. Spellen, (Retired)
Inspector R.Bonvie, RCMP

Advisors
Commander J. Harrigan, Legal Advisor
Lieutenant-Colonel J. Tremblay, Public Affairs Advisor
Dr Jeff Whitehead, Medical Advisor

Observer
Mr Marc Pilon, Ombudsman's Office

Board of Inquiry Staff

Administrative Officer	Captain D. Lessard
Chief Clerk	B. MacDonald
Administration Staff	Master Corporal L. Farrell
	Master Corporal J.S. Frederick
Secretary to Board President	F. Kailles
Information Officer	Captain G. Clairoux
Information Reseachers	Major W.D. Raths (Retired)
	Master Corproal T.W. Martin
	Master Corporal E. Pinto
	Corporal G. Hill
Access to Information	B. Heighway
IMIT	D. Turcotte
	P. Tremblay
	G. Roy
System Dynamics Expert	B. Walker of Condor Associates
Historians	Colonel A. Brown (Retired)
	Dr A. English
	Dr K. Reynolds
Stress Counsellors to Witnesses	Major G. Doyle
	Major L. St-Laurent
Assistant Legal Advisors	Major H. Coulombe
	G. Seymour
Croatia Visit Coordinator	Major S. Tardif

Technical Support

Environmental Advisor	Major F. Lauzon
Internet Web Specialist	H. Tikhonova
	R. Melesse
Document Scanning	XEBEC
Editor	W. Cherwinski of Echelon Communications
Court Reporters	International Rose Reporting Inc.
Translation Services	Composition Ste- Foy
	Masha Krupp Translation
	Appendix Publishing
Bradson Staffing Services	I. Da Costa
	J. Gillis
	M. Lamb
ICSP	S. Munn
	D. Buness
	J. Wilson
	R. Lannan
76 Comm Gp	Staff
765 Comm Services	Staff
Audio-Visual Equipment	TEL-AV
Simultaneous Interpretation	Conference Interpretation Services

The Board of Inquiry gratefully acknowledges the assistance of the following personnel who contributed their time and services to the Board.

ADM HR(MIL) Staff	Colonel S. Hnatiuk
	J. Leclerc
	P. Denny
The Centre	Lieutenant-Colonel R. McLellan
	Chief Warrant Officer J.A. Woodley
Legal Advisors	Lieutenant-Colonel M. Crowe
	Lieutenant-Colonel R. Strum
D Res	Major G.L. Couch
	Captain D. Fenchuk
CFSU(O)	Cashier Staff
DG Int Staff	Brigadier-General R.G. Meating
	Colonel G.S. Graham
	Major R.S. Williams
DGPA Staff	Lieutenant-Colonel B. Boudreau
	Lieutenant-Commander J. Agnew
	Lieutenant- Command D. Laviolette
	J.C. Simon
	S. Jurgutis
	P. Langlois
	T. Crouse

DHH Staff	Lieutenant-Colonel D.S.C. Mackay
	Major M.D. Litalien
	Lieutenant K.J. Deschenes
	Sergeant M.D. Wagner
	Master Corporal M. Wambera
	Corporal S. Hunter
DIPRM	M. McGarry-Mutton
DHRIM Staff	Major J.R.C. Paxton
	P. Tremblay
	B.J. Jones
	J. Mollison
DMCARM Staff	Major J.L.M. Pichette
	Lieutenant(N) J. Hamelin
	Sergeant A.D. Caldwell
	Master Corporal P. Wiseman
VAC Staff	Vice Admiral L. Murray (Retired)
	Brigadier-General P.G. Boutet
	B. Atkinson
	B.Butler
	B. Ferguson
	B. McGregor
	B. Meier
	G. Williams
	K. Black
	K. Miller
	S. O'Brien
	B. MacDormack
	D. Morgan
	D. MacDonald
	D. Smith
	D. Boulet
	J. Burke
	K. Darte
	M. Blanchard
	M. Brathwaite
	O. Drebit
	S. McGuigan
	S. Wood
	S. Lalonde
	T. Talbot
MCE	Captain B.J. Conway
	Warrant Officer E. Audet
Commissionaire Staff of the Canadian Building	
CAC	Y Vaillant

Additionally, the Board would like to thank all the personnel at the various bases and units across Canada who coordinated visits and arranged press conferences on our behalf. Without your assistance, our endeavors would not have been so successful. We also appreciate the work of personnel in Europe that liaised with various governments for the soil sample collection team and our aborted visit to Croatia.

The Board would like to recognize the contribution of many soldiers who through their efforts helped bring this problem to the public's attention. In particular Warrant Officer M.P. Stopford (Retired) and Lieutenant (Navy) E.J. Smith (Retired) deserve special mention.

APPENDIX D

TECHNICAL BRIEFINGS

Wednesday, 11 August 1999

J3 Staff - CF Operations in the Balkans 1991 to 1995

Thursday, 19 August 1999

Ms Ginger Stone, Director Environmental Protection

Dr Stefan Kupca, Director of Nuclear Safety Studies and Analysis

Dr Ken Reimer, Royal Military College of Canada

Friday, 20 August 1999

Directorate of History and Heritage (DHH)

National Defence Reference and Library Services (NDRLS)

Directorate Human Resources Information Management 2

Monday 23 August 1999

Major R. Mehran, Headquarters 33 Canadian Brigade Group, Medical Officer (2 tours in Balkans)

Tuesday, 24 August 1999

Canadian Forces Mapping and Charting Establishment

Wednesday 25 August 1999

Major D.C. Menard, Directorate Medical Policy 2-2

Major P. Gauthier, Directorate Military Careers Resource Management 3-3

Captain J.M.R. Isabelle, Directorate Military Careers Resource Management 3-3-3

Mr K.W.J. Wenek, Director General Military Human Resource Policy and Plans

Mr J. Grenon, Directorate Military Careers Resource Management 3-2-3

Lieutenant-Colonel R. McLellan, Director Casualty Support Administration, The Centre for the Support of Injured and Retired Members and Their Families.

Mr Andre Marin, Canadian Forces Ombudsman

Thursday, 26 August 1999

Captain L. Cooper, J1 Coord

Tuesday, 31 August 1999

Brigadier-General D.M. Jurkowski, Chief of Staff J3

Lieutenant-Colonel W.D. Turner, J3 International 1

Major J.G.P. Desy, J3 International 1-7

Major S. Tardif, J3 ACV DLLS 4-3

Thursday, 2 September 1999

Brigadier-General R.G. Meating, Director General Intelligence

Colonel G.S. Graham, J2 Plans

Lieutenant-Colonel R. McLellan. The Centre

Chief Warrant Officer J. Woodley, The Centre

Ms M. Pesano, Veterans Affairs Canada, The Centre

Tuesday, 14 September 1999

Mr R. Condor, "Navigating in a Complex System"

Lieutenant-Colonel D.S.C. MacKay, Directorate History and Heritage

Ms M. Maier, Environmental Issues

Major G. Couch, Directorate Reserves 4, Reserve Force Personnel Policies

Thursday, 16 September 1999

Mr Lowell Thomas, The Thomas Inquiry

Lieutenant-Colonel A. Milne, The Thomas Inquiry

Lieutenant-Colonel G.J. Cook, Directorate Medical Policy

Major D.B. VanLoon, ACOS OPS R&D

Dr Paul Hebert, Ottawa Hospital, General Campus

Wednesday, 29 September 1999

Major J.E. Crombie, OC Pers Coy, Edmonton Garrison

Friday, 1 October 1999

Brigadier-General P.G. Boutet, DND/VAC Liaison Officer

Mr B.J. Butler, VAC, A/Director Pension and Operation Services

Mr S. Macintosh, VAC, Policy Analyst, Health Care Division

Tuesday, 12 October 1999

Mr N. Desjardins, Directorate of History and Heritage 4

Mr T. Barbaro, Office of the Privacy Commissioner of Canada

Ms N. Sicotte, Office of the Privacy Commissioner of Canada

Wednesday, 1 December 1999

Brigadier-General I. Popowych, Director General Personnel Services

Mr W.D. Roberts, President, Service Income Security Insurance Plan

The Board would like to thank all these personnel who gave of their time and services to brief the Board on their areas of expertise.

APPENDIX E

WITNESSES

The following witness appeared in front of the Board of Inquiry in their offices at 219 Laurier Avenue West, Ottawa, Ontario on the dates below.

Wednesday, 15 September 1999

Major Y. Desy , COS J3 Coord

Thursday, 16 September 1999

Colonel T.J. Calvin, CO CANBAT 1,Op HARMONY, Roto 2 (2 PPCLI)

Monday, 20 September 1999

Sergeant J.E. Audet, Mapping and Charting Establishment

Captain R.D. Gosse, Op HARMONY, Roto 2, Information Officer

Major M.J. Flint, Op HARMONY, Roto 2, CO Field Engineer Troop

Master Seaman R.S. Harnum, Op HARMONY, Roto 2, Preventative Medicine Technician

Chief Warrant Officer M.B. McCarthy (Retired), Op HARMONY, Roto 2, Regimental Sergeant Major

Master Warrant Officer R.A. Northrup, Op HARMONY, Roto 2, CSM, Combat Support Company

Tuesday, 21 September 1999

Captain R.H. Sparks (Retired), Op HARMONY, Roto 2, Padre

Colonel M. Lessard, CO CANBAT 1, Op HARMONY, Roto 3 (R22eR BG)

Major C. Simard, Op HARMONY, Roto 3, Medical Officer

Wednesday, 22 September 1999

Captain K.R. Brett (Retired), Op HARMONY, Roto 2, Medical Officer

Captain J.A. Cloutier, Op HARMONY, Roto 3, Padre

Master Warrant Officer D. Pelletier, Op HARMONY, Roto 3, Company Sergeant Major

Major C. Papineau, Op HARMONY, Roto 3, 2IC, Administration Company

Major S. Beausejour, Op HARMONY, Roto 3/Operations Officer

Sergeant P. Barrette, Op HARMONY, Roto 3, Information Sergeant

Master Corporal J.W.D.M. Chevarie, Op HARMONY, Roto 3, Preventative Medicine Technician

Major N. Paik, Op HARMONY, Roto 3, CO, Field Engineer Troop

Major S. R. Gallant, Op HARMONY, Roto 2, CO, Administration Company

Thursday, 23 September 1999

Captain T.J. Bachynski (Retired), Op HARMONY, Roto 4, Medical Officer

Major J. Guevremont, Op HARMONY, Roto 3, Padre

Lieutenant (Navy) M.J. Brown, Op HARMONY, Roto 2, Padre

Sergeant J.E. Audet, Mapping and Charting Establishment

Master Warrant Officer G.J. Boyle, (Retired), Op HARMONY, Roto 4, CSM, Administration Company

Lieutenant-Colonel M. Diakow, (Retired), CO CANBAT 1, Op HARMONY, Roto 4 (1 PPCLI BG)

Major D.A. Marshall, Op HARMONY, Roto 4, Administration Officer

Major J.R. Bagnell, Op HARMONY, Roto 4, Operations Officer

Lieutenant-Colonel P. Bartlett, Op HARMONY, Roto 4, OC Headquarters Company

Friday, 24 September 1999

Captain N. Gregory, Op HARMONY, Roto 4, Information Officer

Major D. Basinger, Op HARMONY, Roto 4, OC Field Engineer Troop

Master Seaman W.J. Kelloway, Op HARMONY, Roto 4, Preventative Medicine Technician

Captain J. Organ, Op HARMONY, Roto 4 , Padre

Major R.J. Ferguson, Op HARMONY, Roto 4, OC Administration Company

Captain E. Squires, Op HARMONY, Roto 4, 2IC, Administration Company

Chief Warrant Officer J.M.A. Parent, Op HARMONY, Roto 3, Regimental Sergeant Major

Wednesday, 29 September 1999

Lieutenant-Colonel P. Wynnyk, J3 Ops 3-3

Tuesday, 12 October 1999

Lieutenant-Commander D.G. Passey, 1 Health Support Operational Training Unit, Edmonton

Wednesday, 13 October 1999

Captain D. Platt, HQ CCUNPROFOR, G3 Engineer, October 1994 to August 1995

Friday, 15 October 1999

Lieutenant-Colonel C.R. King, Op HARMONY, Roto 2, OC A Company

Major-General S.T. McDonald, Chief of Reserves and Cadets

Lieutenant-Colonel G.J. Cooke, Directorate of Medical Policy, Public Health Section

Chief Warrant Officer J.M.Y. Cuillerier (Retired), Directorate of Health Protection and Promotion 2-2-2

Monday, 18 October 1999

Master Warrant Officer P.W. Lawler, Op HARMONY, Roto 2, 5 Platoon 2IC, B Company

Warrant Officer G.S. Crossman, Op HARMONY, Roto 2, Mortar Group Commander

Master Warrant Officer E.D. Larabie, Op HARMONY, Roto 2, Reconnaissance Platoon Warrant Officer

Corporal A.P. Kwasnicki, Op HARMONY, Roto 2, Rifleman, 11 Platoon, D Company

Colonel J. Calvin, CO CANBAT 1, Op HARMONY Roto 2 (2 PPCLI)

Tuesday, 19 October 1999

Sergeant M.P. Dow (Retired), Op HARMONY, Roto 2, Transport NCO, D Company

Corporal D.J. Douglas, Op HARMONY, Roto 2, Driver, Mortar Group

Chief Warrant Officer D.F. DesBarres (Retired), Op HARMONY, Roto 2, 8 Platoon 2IC, C Company

Warrant Officer W.A. Johnson, Op HARMONY, Roto 2, 9 Platoon 2IC, C Company

Master Corporal S.C. Atkins, Op HARMONY, Roto 2, Medical Assistant, D Company

Thursday, 21 October 1999

Corporal S.H. Marissink , RCMP, UN Civilian Police Investigating Officer, Sector South, UNPROFOR

Corporal M.E. Floyd, RCMP, UN Civilian Police, Deputy Station Commander, Korenica, Sector South, UNPROFOR

Major D. Drew, Op HARMONY, Roto 2, OC D Company

Wednesday, 27 October 1999

Major F. Lauzon, NDHQ, D Env P3-3

Major S. Tardif, NDHQ, ACV DLLS 4-3

Thursday, 28 October 1999

Warrant Officer M.P. Stopford (Retired), Op HARMONY, Roto 2, 11 Platoon 2IC, D Company

Dr K.J. Reimer, Director, Environmental Sciences Group, RMC

Friday, 9 November 1999

Ms G. A. Stones, Director Environment Protection

Lieutenant-Colonel M.J. Tysiaczny (Retired), Regional Surgeon, Air Command Headquarters (1993)

Master Corporal P. Tobicoe, Op HARMONY, Roto2, Detachment Commander, Anti-Armour Platoon

Wednesday, 10 November 1999

Colonel G.J. Oehring (Retired), Commander, Sector South, UNPROFOR (September 1993 to May 1994)

Corporal M. Innis (Retired), Op HARMONY, Roto 4, Material Technician, Ancillary Section, Maintenance Platoon

Friday, 19 November 1999

Major B.P. Gauthier, Directorate Military Careers Administration and Resource Management 3-3

Major T. Cook, Director of Post Deployment Regional Health Clinic / Defence and Civil Institute of Environmental Medicine

Major D. Lussier, Directorate Military Careers Administration and Resource Management 3-2

Tuesday, 23 November 1999

Lieutenant-Colonel C. Engel, US Army, Walter Reed Medical Center, gulf War Syndrome Clinic, Washington, DC

Colonel T. Sparling (Retired), Director of International Policy (September 1993 to August 1995)

Mr A. Hywarren, Directorate of International Policy

Lieutenant-Colonel R.G. McLellan, Director Casualties Support and Administration

Wednesday, 24 November 1999

Master Warrant Officer D. Hartford, Op HARMONY, Roto 1, Troop Warrant Officer, Engineer Field Troop

Mr K. Wenek, Director General Military Human Resource Policy and Plans

Commander R.H. Edwards, Directorate of Peacekeeping Operations

Lieutenant-Colonel S.E. Moffat, Peacekeeping Section, Department of Foreign Affairs and International Trade

Lieutenant-Colonel D.M. Genest, Directorate of Military Engineering 3 / J3 Engineering Operations

Thursday, 25 November 1999

Major D.C. Menard, Directorate of Medical Policy

Sergeant G. Goudie, Op HARMONY, Roto 2, Section 2IC, 5 Platoon, B Company

Sergeant C. Byrne, Op HARMONY, Roto 2, Section 2IC, 11 Platoon, D Company

Major-General A.R. Forand, Commander, Sector South, UNPROFOR (1995)

Mr W. D. Roberts, President, Service Income Security Insurance Plan

Friday, 26 November 1999

Master Warrant Officer H. Leduc (Retired), National President, Canadian Peacekeeping Veterans Association

Warrant Officer C. Fahie (Retired), Chief Clerk, Canadian Contingent Headquarters, UNPROFOR, (1994-1995)

Monday, 29 November 1999

Lieutenant (Navy) E.J. Smith (Retired), Op HARMONY, Roto 4, Medical Officer

Master Warrant Officer R. Leveille, (Retired), Op HARMONY, Roto 3, CSM, D Company

Lieutenant-Colonel J.H.A. Brisebois (Retired), Op HARMONY, Roto 3, Deputy Commanding Officer

Master Corporal M.G. Detheridge (Retired), CANBAT 2, Op CAVALIER, Roto 4, Medical Assistant

Master Corporal R. Guerault, Op HARMONY, Roto 3, Radio Technician, Signals Platoon

Private F. Gagnon, Op HARMONY, Roto 3, Driver, Ant-Tank Platoon

Corporal G.A. Williams (Retired), Op RECORD, Plumber Gas Fitter (1992)

Colonel A. Brown (Retired), Historian

Thursday, 16 December 1999

Mr B. Butler, A/Director, Pension and Operational Services, Veterans Affairs Canada

Thursday, 20 January 2000

Dr M. Richardson, O'Connor Associates Environmental Inc.

Dr S. Clarkson, A/Director, Bureau of Chemical Hazards, Environment Health Directorate, Health Canada

Dr G.C. Becking, Environmental Consultant

Major F. Lauzon, Directorate General Engineering

Dr K. Reynolds, Directorate Heritage and History

The Board Members would like to thank all witnesses that took time from their busy schedules to come to Ottawa to tell the Board their personal experiences from Croatia. The Board would also like to thank the personnel that came forward during our visits to share their experiences.

APPENDIX F

WRITTEN SUBMISSIONS

The following personnel provided written submissions to the Board for inclusion in and use in determining findings.

Colonel A. Brown (Retired) – Committal of Canadian Forces to the Peace Support Operations

Colonel A. Brown (Retired) - Command, Control and Intelligence in Peace Support Operations

Dr A. English – Historical and Contemporary Interpretations of Combat Stress Reaction

Dr K. Reynolds – CF Operations in the Balkans 1991 to 1995

Dr K. Reynolds - Background and Highlights of Canadian Forces Operations in Croatia 1992 - 1995

APPENDIX G

BOARD VISITS

27 August 1999

CFB Gagetown, NB – Land Force Atlantic Area personnel

3 September 1999

Peterborough ON – visit with Warrant Officer M.P. Stopford (Retired)

7 September 1999

Calgary AB – Land Force Western Area members - Mewatta Armouries

8 September 1999

Edmonton – Commanders' Conference

- HQ 1 CMBG - COs, RSMs and Staffs
- 1 CMBG – Officers and senior NCOs
- 1 CMBG - members
- Land Force Western Area Reserve Members

9 September 1999

Winnipeg – 1 CMBG members

- Land Force Western Area Reserve Members

10 September 1999

Shilo - Regular Force Members

4 October 1999

Longue Pointe Garrison, Land Force Quebec Area Staff

Longue Pointe Garrison, Land Force Quebec Area Personnel

5 October 1999

CFB Valcartier –Land Force Quebec Area Personnel

14 October 1999

CFB Gagetown – Base Commander

- Officers and Senior NCOs
- Junior NCM personnel

15 November 1999

Vancouver – Jericho Beach – British Columbia-based Veterans of the Balkans

16 November 1999

Camp Wainwright – North Alberta-based Veterans of the Balkans

17 November 1999

Regina – Saskatchewan-based Veterans of the Balkans

22 November 1999

Charlottetown, PEI – meetings with Veterans Affairs Canada Staff

7 December 1999

Vancouver – Jericho Beach – Land Force Western Area Personnel

Ottawa - NDMC Personnel

- 33 CBG Personnel

8 December 1999

Victoria, BC – Maritime Forces Pacific in Equimalt

Calgary, AB – Mewatta Armoury

Montreal, PQ – Secteur Quebec Force Terrestre Headquarters

St Jean, PQ – Base "Megaplex"

Sherbrooke, PQ – Belvedere Street Armoury

9 December 1999

Kingston – Commander, 1 Canadian Division

- Base Personnel

Edmonton – 1 CMBG HQ

Valcartier – Land Force Quebec Area Personnel

10 December 1999

Winnipeg – 2nd Battalion, Princess Patricia's Canadian Light Infantry

Edmonton – Reserve Officers' Mess, Greisbach Garrison

Gagetown – Canadian Forces School of Military Engineering

Moncton – 8th Canadian Hussars (Princess Louise's) Armoury

11 December 1999

Winnipeg – Minto Armouries

Halifax – Prince George Hotel - Land Force Atlantic Area Personnel

12 December 1999

CornerBrook, Nfld – 2nd Battalion, Royal Newfoundland Regiment Armoury

St John's Nfld – Canadian Forces Station St John's

The Board would like to thank all personnel at the bases and units that coordinated meetings with area personnel.

APPENDIX H

CF PERSONNEL DEPLOYED TO CROATIA

BOI Database Roundup

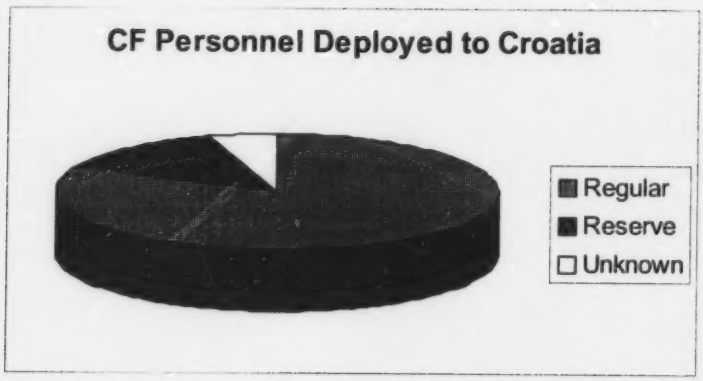
Unknown component represents those members accumulated without having sufficient information to determine the component. Figures take into account those affected to Croatia during Op Harmony dates except for Op Cavalier which operated in a completely different area.

COMPONENT	CF PERSONNEL
Regular	7331
Reserve	1189
Unknown	445
	8965
Released Regular	**459**
Released Reserve	**96**
Figures from these Ops included	
ECMM Staff	**376**
Op Mandarin (total)	**1760**
Op Speaker (total)	**343**

Op Harmony Dates	**ROTO**	**Unit**
April 92 - Oct 92	0	1 R22R
Oct 92 - Apr 93	1	3 PPCLI
Apr 93 - Oct 93	2	2 PPCLI
Oct 93 - Apr 94	3	1 R22R
Apr 94 - Oct 94	4	1 PPCLI
Oct 94 - Apr 95	5	1 RCR
Apr 95 - Sep 95	6	2 R22R
Mar 92 - Sep 92	CanEngBat	4 CER
Sep 92 - Mar 93	CanEngBat	1 CER

Op Speaker	
Aug 94 - Feb 95	1
Feb 95 - Aug 95	2
Sep 95 - Apr 96	3

Op Mandarin		**Unit**
Mar 92 - May 93	CanLogBat	CCSG
May 93 - Apr 94	CanLogBat	5 Svc Bn
Apr 94 - Oct 94	CanLogBat	1 Svc Bn
Oct 94 - May 95	CanLogBat	2 Svc Bn
May 95 - Sep 95	CanLogBat	5 Svc Bn
Sep 95 - Jan 96	CanLogBat	1 Svc Bn


CF Personnel Deployed to Croatia
Regular
Reserve
Unknown

APPENDIX I

LIST OF EXHIBITS

EXHIBIT #	TITLE	Provided by
15 September 1999		
1	4 Pages Unit Participation Summary	Maj. Desy
2	2 Pages List of Units/CO's for CCUNPROFOR, CC1 FOR, CCSFOR Contingents	Maj. Desy
3	Letter of Promulgation Rotation Standing Operating Procedures (SOP's) 01 18 Apr 95	Maj. Desy
4	2 Page SIR MSG G3 Ops 064 of 16 May 95 Fm LFWAHQ to NDOC Ottawa	Maj. Desy
5	2 Page SIR Follow-up MSG G3 Ops 065 of 17 May 95 Fm LFWAHQ to NDOC Ottawa	Maj. Desy
6	2 Page MSG COS 238 211203Z May 95 Fm CCUNPF ZAGREB to NDOC Ottawa	Maj. Desy
7	4 Page MSG COS J3/DGMPO 1159 271745Z Jul 95 Environmental Hazards UN Ops	Maj. Desy
8	2 Page MSG PPCLI Ops 090 102153Z Aug 95 Environmental hazards CANBAT 1 AOR	Maj. Desy
9	2 Page MSG Ops 757 140946Z Nov 95 Environmental hazards CANBAT 1 AOR	Maj. Desy
10	27 Page Brief COS J3 Briefing to BOI on the Contaminated Soil Croatia	Maj. Desy
11	1 Page MSG 20 Sept 95 Soil Samples	Maj. Desy
12	12 Pages of e-mails	Maj. Desy
13	1 Page Letter Exposure to Bauxite and PCB's LT(N) Smith	Maj. Desy
14	2 Page Briefing Note for Minister dated 17 Nov 98	Maj. Desy
15	1 Page Memo DCDS dated 27 Nov 98 Exposure to Contaminated Soil	Maj. Desy
16	30 Page Memo ADM(IE) Possible Contamination of Canadian Soldiers dated 9 Dec 98	Maj. Desy
17	6 Pages Memo COS DCDS 13 Jun 99 Soil Contamination in Croatia	Maj. Desy
18	2 Page Memo fm DCDS titled Possible Exposure of Canadian Soldiers in Croatia	Maj. Desy
19	3 Pages of Maps concerning Medak Operations Sept 93	Maj. Desy
20	1 Page letter 19 Feb 97 Capt. Gagne to LCol Calvin Hazard Documentation	Maj. Desy
21	1 Page Minute Sheet dated 24 Jul 95 Fm LCol Cook to Surg Gen	Maj. Desy

22	7 Page Memo dated 2 Feb 99 Subj: Inquiry into Potential Injury Caused by Exposure to Bauxite and PCB's	Maj. Desy
23	9 Page Memo dated 16 Feb 99 DLFR Subj: Staff Check Toxic Industrial Materials	Maj. Desy
24	3 Page Chronology of Events Involving COS J3 Staff	Maj. Desy
	16 Septernber 1999	
25	16 Pages Flight Manifests provide by OC Rear Party 17 Sep 93	Col. Calvin
	18 October 1999	
26	1 Map titled Dubrovac Map	Col. Calvin
27	1 Map titled CANBAT 1 Obrovac	Col. Calvin
28	1 Map titled Sector West Deployment	Col. Calvin
29	3 Trays of Slides 35mm on compact disc	Col. Calvin
	20 September 1999	
30	1 Map Unit Disposition Roto 2 2PPCLI Apr 93-Oct 93	Sgt. Audet
31	1 Map Unit Disposition Roto 3R22R Oct 93-Apr 94	Sgt. Audet
32	OP Order 30 Pgs OP Harmony Roto 2 2 PPCLI 16 March 1993	Sgt. Audet
33	OP Order 61 Pgs Ordre Confirmatoire No. 22 21 Octobre 1993	Sgt. Audet
	21 September 1999	
34	1 Map 1:50,000 Series UNPROFOR 1002, Sheet 470-3, Edition UNPROFOR 2	Padre Sparks
35	1 Slide showing Factory in Croatia	Padre Sparks
36	1 Slide showing Gorge, Town and Factory in distance Croatia	Padre Sparks
37	Slide presentation 21 slides (Pgs) 3R22R Tour Croatia 2 Oct 93-11 Apr 94	Col. Lessard
	22 September 1999	
38	Slide presentation 78 slides (pgs) c/w paper copy of each with colour miniatures of each slide Tour Croatia Roto 2, Apr 93-Oct 93	Dr. K. Brett
39	8 Pages Copies of Pictures taken by MWO Pelletier during tour in Croatia Roto 3 Oct 93-Apr 94	MWO Pelletier
	23 September 1999	
40	1 Copy Dr Bachynski Roto 4 Croatia Apr 94-Oct 94 Pictured behind pile of Bauxite	Dr Bachynski
41	Copy of Lt.(N) Brown's story of experiences at Medak Pocket	Lt.(N) Mike Brown
42	1 Map Unit Disposition 1 PPCLI Roto 4 Sheet 4	Sgt. Audet
43	1 Map Unit Disposition 1 PPCLI Roto 4 Sheet 4A	Sgt. Audet
44	Op Harmony Roto 4 – CCUNPROFOR – CANBAT 1 OP O 46 dated 11 April 94	Sgt. Audet
45	CANBAT 1 OPERATION ORDER 46 Amendment	Sgt. Audet

	List Five Dated 29 September 1994	
46	24 Page Text of LCol Diakow's Presentation Roto 4 Croatia	LCol Diakow
47	Operational Lessons Learned 1PPCLI in OP Harmony Roto 4	LCol Diakow
48	17 Page OP Harmony Roto 4 1PPCLI After Action Report	LCol Diakow
49	3 Page BN Nominal Roll 1PPCLI Roto 4 Croatia 1994	LCol Diakow
50	22 Page BN Nominal Roll 1PPCLI Roto 4 Croatia 1994	LCol Diakow
	12 October 1999	
51	Research Project 22 Pages Titled Psychological Consequences of Canadian UN Peacekeeping	LCdr DG Passey
52	27 Page Document Titled Stress Disorders in UN Peacekeepers	LCdr DG Passey
	13 October 1999	
53	1 Page fm Day timer May to Jul 95	Capt. D. Platt
54	8 Page SITREP fm Capt. Platt	Capt. Platt
	15 October 1999	
55	16 Page Document Croatia, the Media and the Facts (27 Aug 99)	LCol Cook
56	15 Page Document Human Exposure to PCB's (1995)	LCol Cook
57	14 Page Review Position Paper of the American Council on Science and Health: Public Health Concerns about PCB's (1997)	LCol Cook
58	Recommendations for Training PMED Tech's	CWO (Ret'd) Cuillerier
59	41 Page Document MCE Analysis of Operation Yugoslavia	CWO (Ret'd) Cuillerier
60	5 Page Msg. SURG GEN AIG 1704 PMED Recommendations for OP Harmony	CWO (Ret'd) Cuillerier
61	14 Page RECCE Checklist for Operations	CWO (Ret'd) Cuillerier
62	17 Page PMED Recommendations OP Harmony	CWO (Ret'd) Cuillerier
63	13 Page UK Report Hygiene Matters on OP Hanwood (Croatia)	CWO (Ret'd) Cuillerier
64	8 Page Draft Actual P MED Situation	CWO (Ret'd) Cuillerier
	18 October 1999	
65	4 Minute VHS Video Sweep Team	WO Crossman
	19 October 1999	
66	5 Pages of black/white copies of photos of 9 PL Coy House and 1 copy of Coy HQ taken 1993	WO Johnson
67	2 Colour photos (1997)of 9 PL house in Medak	WO Johnson
	20 October 1999	
68	UNCIVPOL Sector South Final Report on Medak Pocket dated October 10, 1993	Cpl. Marissink, RCMP
69	51 Colour Photos taken of Medak Pocket Sep 93	Cpl. Marissink, RCMP

	27 October 1999	
70	Map of Area for OP Contact/Soil Sampling	Maj. J. Tardif
71	3 Pages List of Sites Soil Samples in Croatia	Maj. J. Tardif
	28 October 1999	
72	WO (Ret'd) Matt Stopford's statement, 8 pages	WO (Ret'd) Matt Stopford
73	Copy of DND Medical File for WO (Ret'd) Matt Stopford	WO (Ret'd) Matt Stopford's
74	Copy of paper on Chronic Fatigue Syndrome	WO (Ret'd) Matt Stopford's
75	2 Page letter dated 4 Aug 99 from CF Provost Marshall to WO (Ret'd) Matt Stopford'	WO (Ret'd) Matt Stopford's
76	Copy of Application of WO (Ret'd) Matt Stopford to Veterans Affairs Canada	WO (Ret'd) Matt Stopford's
	28 October 1999	
77	3 Page statement from Dr. Reimer (co-signed by Dr. J Poland, Queens)	Dr. Ken Reimer
	09 November 1999	
78	20 page Environment and Health Policy and Procedures for Deployed Ops	Ginger Stones
79	77 Page US CENTCOM Assessment Team South East Asia Oct-Dec 94	Ginger Stones
80	1 Page E-mail DCDS Environmental Engr advice and tasks dated Aug 12 1999	Ginger Stones
81	Map showing location of stream where drew water supply	MCpl. Tobicoe
82	Map showing UN Op layout in Croatia & Bosnia	MCpl. Tobicoe
83	7 Page copy of camp locations occupied by MCpl. Tobicoe during tour with Roto 2 PPCLI	MCpl. Tobicoe
	10 November 1999	
84	Col. Oehring's presentation to BOI 10 Nov 99 (11 page)	Col. Oehring
85	4 Page statement Col. Oehring covering period Sept 93-May 94 (as Comd. Sector South Croatia) dated 4 Oct 99	Col. Oehring
86	2 Photos showing red soil Czech location	Col. Oehring
	19 November 1999	
87	Graph comparing 3B medical release rates NCM and officers below rank for Col. for 1998	Maj. Gauthier
88	9 Pg. Document by DGMC Administrative Review/Medical Employment Limitations	Maj. Gauthier
89	6 Pg. Document Comparative Charts of Personnel released under item 3B	Maj. Gauthier
90	3 Pg. Review of Universality of Service – Points of Discussion for AFC	Maj. Gauthier
91	13 Pg. Article From Annals from Internal Medicine: Titled "Functional Somatic Syndrome"	Maj. Cook

92	80 slide presentation of Maj. Cook	Maj. Cook
93	Release Guide by DMCARM3-2-2 dated 1 Sept 99	Maj. Lussier
94	1 Pg. Org Chart DMCARM 3-2	Maj. Lussier
95	CFAO 15-2 Release Regular Force	Maj. Lussier
96	CFAO 16-1 Leave	Maj. Lussier
97	DGMC Release process	Maj. Lussier
98	Msg. Sick leave during retirement	Maj. Lussier
99	E-mail D Mil C Sec MPHL vs. Annual Leave	Maj. Lussier
	23 November 1999	
100	Dr. C. Engel presentation (44 pgs) to BOI titled "Unexplained Physical Symptoms – Relationship to Psychological Factors"	Dr. Charles C. Engel, Jr. M.D., LCol., U.S. Army
101	2 Pg. Criteria for Canadian Participation in UN Peacekeeping (dated somewhere between Jan 93-Dec 94)	Col. Sparling (Ret'd)
102	Briefing Note for the CDS – UN Charter CHPT 6 and 7 dated 24 Mar 93 (prepared by DI Pol 3-2)	Mr. Hywarren
103	McLellan Report Care of Injured Personnel	LCol McLellan
104	Stowe Report – Study of the Treatment of Members Released from the CF on Medical Grounds	LCol McLellan
105	Maj. Strickland presentation	LCol McLellan
106	DCSA presentation DND – VAC Centre	LCol McLellan
	24 November 1999	
107	Draft (50 pg.) report "Review of the Universality of Service Principle and its Application" Ver 03 Nov 99	Karol Wenek
108	21 Pg. Briefing to Armed Forces Council 19 Nov 99 titled "Universality of Service Review"	Karol Wenek
109	J Staff SOP's - Section 5000 Titled J5 Policy Ops (6 Pgs)	Cdr. R. Edwards
110	7 Pg. Presentation titled "Environmental Hazards on Deployed Operations – J3 Engr Involvement"	LCol Genest
111	2 Pg. E-Mail Environmental SP to Deployed OPS	LCol Genest
112	1 Pg. Letter STANAG 2909 Study Draft 2 – Defensive Measures Against TIM	LCol Genest
113	4 Pg. DCDS Tasking #99084 Mission Review Exposure to Toxic Substances	LCol Genest
	25 November 1999	
114	BOI Presentation (57 Pg.) titled "The Fall of the Serbian Republic of Krajina - Observations on the UN Role"	MGen Forand
115	Right slide listing for MGen Forand's slide presentation Exhibit #114 (21 Pg.)	MGen Forand
116	Left slide listing for MGen Forand's slide presentation Exhibit #114 (25 Pg.)	MGen Forand
117	SISIP Pamphlet Titled "At A Glance"	Mr. WD Roberts

118	SISIP Claim Form for LTD	Mr. WD Roberts
119	SISIP Pamphlet Titled "Rehabilitation"	Mr. WD Roberts
120	SISIP document	Mr. WD Roberts
	26 November 1999	
121	3 Pg. Letter from Canadian Peacekeeping Veterans Association to DM Veterans Affairs Canada Nov 9, 1999	Mr. H. Leduc
122	3 Pg. Letter from Canadian Peacekeeping Veterans Association to Cliff Chadderton October 20, 1999	Mr. H. Leduc
123	3 Pg. Letter from Canadian Peacekeeping Veterans Association to Rt. Hon Jean Chretien, PM, Nov 3, 1999	Mr. H. Leduc
124	5 Pg. Document Canadian Peacekeeping Veterans Association outlining their services	Mr. H. Leduc
125	2 Pg. Document article from National Post Online A Century of War and military heroism	Mr. H. Leduc
126	2 Pg. Letter from Canadian Peacekeeping Veterans Association to PM The Right Hon Jean Chretain November 12, 1999	Mr. H. Leduc
127	8 Pg. Article "The Blue Beret" published by Canadian Peacekeeping Veterans Association Sept 1999 issue	Mr. H. Leduc
128	VAC Medical File on Charlene Fahie dated March 29,1999	Darlene Fahie
	29 November 1999	
129	Document titled "Historical and Contemporary Interpretations of Combat Stress Reaction"	Al English, Ph.D.
130	Document titled "Command, Control and Intelligence in Peace Support Operations"	Angus Brown
131	Document titled "The Committal of Canadian Forces to Peace Support Operations"	Angus Brown
	16 December 1999	
132	Briefing for Board Of Inquiry – Croatia 16 Dec 1999 Veterans Affairs Canada	Bernard Butler
133	VAC Briefing to Board titled "Review of Veteran's Care Needs" November 1999 21 slides on 11 Pages	Bernard Butler
134	Final Report – Assessment of Potential Risks Posed to Canadian Troops Exposed to Soils During Peacekeeping Duties in Croatia, 1993 to 1995	O'Connor Associates Environmental Inc. Dr M. Richardson
135	Letter dated 9Nov 99 to Health Canada – Dr S. Clarkson – Toxicological Health Assessment of Soldiers From Exposure to Environmental Contaminants in Croatia	Maj Lauzon
136	Letter dated 16 Dec 99 to Health Canada – Mr R. Raphael – Toxicological Health Risk Assessment of Soldiers Exposure to Environmental Contaminants in Croatia	Maj Lauzon

137	Letter dated 16 Dec 99 from Health Canada – Mr S. Clarkson - ref Environmental Contamination Issues	Maj Lauzon
138	Letter dated 23 Dec 99 to Health Canada – Mr S. Clarkson – Toxicological Health Risk Assessment of Soldiers Exposure to Environmental Contaminants in Croatia	Maj Lauzon
139	Environment and Health Policy and Procedures for Canadian Forces Operations	Maj Lauzon
140	Curriculum Vitae – Mr G.C. Becking	George Becking
141	Canadian Forces Operations in Croatia 1992 – 1995	Dr K. Reynolds
142	Background and Highlights of Canadian Forces Operations in Croatia, 1992 – 1995	Dr K. Reynolds

APPENDIX J

ACRONYMS, ABBREVIATIONS AND DEFINITIONS

2 PPCLI	2nd Battalion, Princess Patricia's Canadian Light Infantry
2IC	Second In Charge
ADM (HR-Mil)	Associate Deputy Minister (Human Resources – Military)
AFC	Armed Forces Council
AST	Advanced Surgical Team
BG	Brigade Group
CANBAT	Canadian Battalion (United Nations Term)
CANFORGEN	Canadian Forces General (usually a message to all the CF)
CCME	Canadian Council of Ministers of Environment
CDS	Chief of the Defence Staff
CF	Canadian Forces
CFSA	Canadian Forces Superannuation Act
CISD	Critical Incident Stress Disorder
CO	Commanding Officer
COS	Chief of Staff
CSM	Company Sergeant Major
DGE	Director General Environment
DND	Department of National Defence
HQ CCUNPROFOR/G3 Engr	Headquarters, Canadian Contingent, United Nations Protection Force/G3 Engineering
J1 COORD	Joint Staff 1 Coordinator – Human Resources (Military)
J3 NBC	Joint Staff 3 Nuclear, Biological, Chemical
MOC	Military Occupation Code
MPHL	Medical Patients Holding List
NCO	Non-Commissioned Officer
OC	Officer Commanding
OP HARMONY	Operation Harmony – April 1992 – September 1995

OP MANDARIN	Operation Mandarin – March 1992 – January 1996
OP SPEAKER	Operation Speaker – August 1994 – April 1996
P MED TECH	Preventative Medicine Technician
PCBs	Polychlorinated Biphenyls
Pl	Platoon
PMIS 2000	Personal Management Information System 2000
PTSD	Post Traumatic Stress Disorder
R22eR	Royal 22nd Regiment
ROTO	Rotation
ROWPU	Reverse Osmosis Water Purification Unit
SCAN	Second Career Assistance Network
SISIP	Service
TQ 5	Trade Qualification Level 5
UN	United Nations
VAC	Veteran's Affairs Canada

Definitions

Op ENTERPRISE – a major project to provide information technology support to the Defence Team's human resource processes utilizing a world leading human resource (HR) system called PeopleSoft HR as the foundation system. The new system will replace the current systems which are outdated and for the first time utilize one integrated data base to provide support to both the military and civilian members of the DND/CF.

"Mission Creep" – a phenomena wherein the mission expands over time in scope and magnitude so that additional resources must be committed to succeed.